REFERENCE MANUAL

FOR ARCHITECTS AND ENGINEERS

Barrett

SHOREHAVEN GARDEN APARTMENTS
ROOFED BY BARRETT

1949

BUILT-UP ROOFING • FLASHING • ROOF DRAINAGE • WATERPROOFING • DAMP-PROOFING

Foreword

This manual contains specifications and detailed drawings treating with Built-up Roofing for flat and steep roof decks, Roof Flashing, Roof Drainage, and Waterproofing and Dampproofing systems. The most practical methods and procedure are presented, arranged to show exactly the construction secured when the specifications are followed. Thus, the architect, builder or building owner is provided with reference material designed from his viewpoint and with his interest in mind.

Architects and construction engineers have found these methods to be entirely reliable and technically up-to-date. Their practical value is evidenced by their use on so many of the country's largest and finest structures.

technical service bureau

For unusual problems not covered in this book, a Technical Service Bureau is available for consultation at any time, without obligation. This service is maintained to provide general and technical information and facts of value in the fields in which Barrett has been identified with leadership for many years. Address the Technical Service Bureau, The Barrett Division, Allied Chemical & Dye Corporation, 40 Rector St., New York 6, N. Y.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET • NEW YORK 6 • N. Y.

2800 So. Sacramento Avenue, Chicago 23, Illinois
Birmingham, Alabama

In Canada: The Barrett Co., Ltd., Montreal, Que.

protection for buildings

The cross-sectional drawing on the opposite page will help you to visualize the application of Barrett building products to problems of roofing, waterproofing, damp-resisting treatment, and drainage. From roof to sub-cellar, wherever it is necessary to prevent the inroads of rain, melting snow or standing water on the roof, restrain entry of water under pressure, provide resistance to foundation erosion caused by running water, or simply prevent seepage due to intermittent presence of water in small quantities, Barrett materials can be relied on to do a thorough job of protection.

For flat roofs, the standard in the roofing industry has long been the Barrett "SPECIFICATION" Roof. It carries the Barrett bond, providing the building owner with Barrett's assumption of all repair and maintenance expenses made necessary by ordinary wear and tear by the elements, for periods up to twenty years. For inclined decks, Barrett offers a special bonded Steep Roof of the same type, and utilizing a resilient, non-sliding pitch especially designed for the purpose; also S.I.S. Roofs in colorful, fire-resistant mineral surfacings.

As the drawing shows, Barrett also supplies —and this manual specifies—materials and methods for membrane waterproofing, damp-resistant treatment, and flashing systems. The membrane method uses felt or cotton fabric with continuous moppings of pitch to provide a complete waterproof blanket over the area covered. It is the only truly effective way to provide protection against water under pressure. Barrett materials for repelling dampness include pitch-base paints and plastic coatings, and are effective where there is no hydrostatic pressure. Barrett flashing systems are used at parapet walls, curbs, window sills, spandrel beams, etc. They employ variously pitch and felt, or saturated fabric and plastic cement (according to the type flashing).

Barrett

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roofing

waterproofing system

Membrane Method

damp-proofing and damp-resisting systems

For Walls or Floors Not Under Hydrostatic Pressure

flashing system

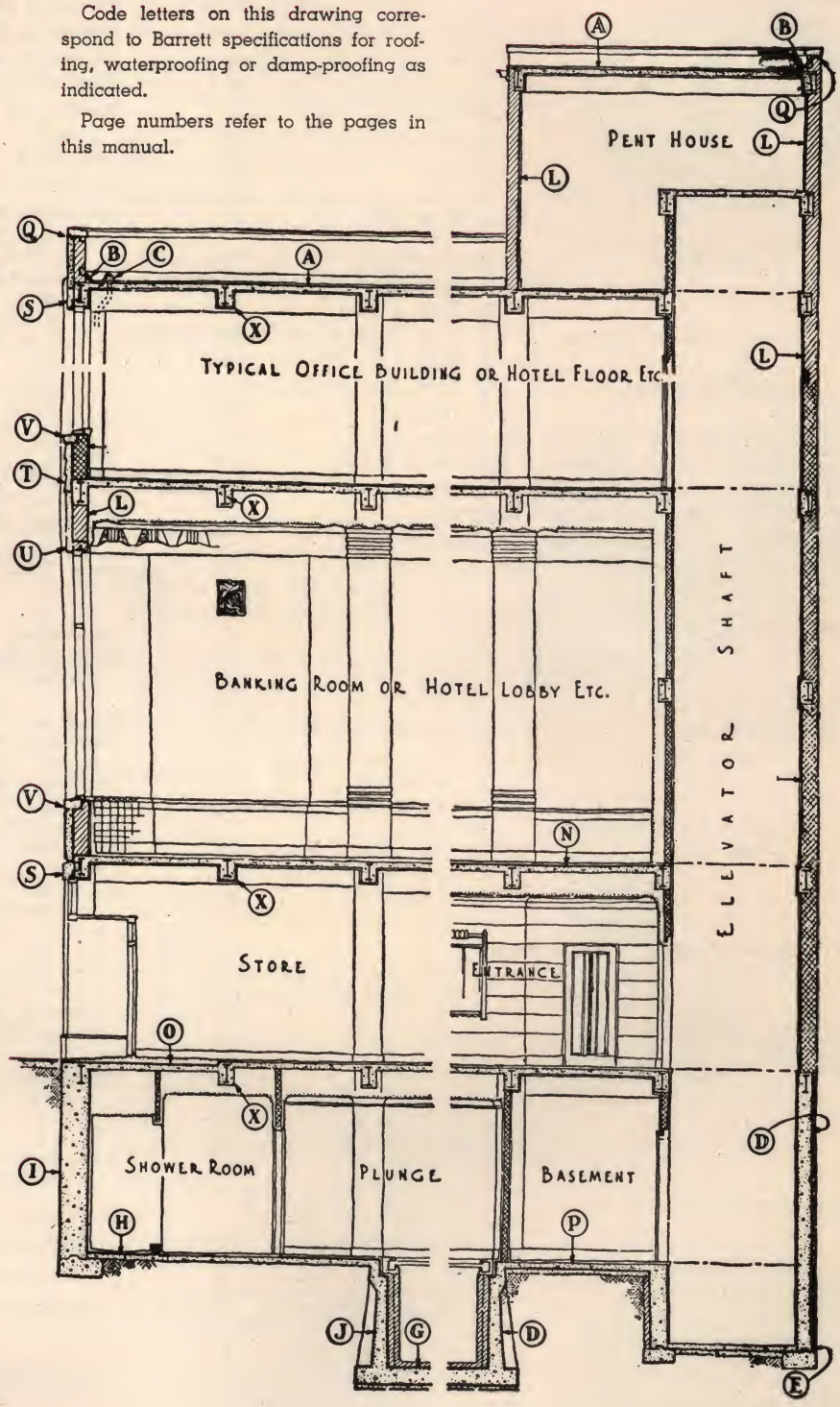
Parapet Walls

Spandrel Beams

protective paint

Code letters on this drawing correspond to Barrett specifications for roofing, waterproofing or damp-proofing as indicated.

Page numbers refer to the pages in this manual.



for tabular index to roof specifications see page 10

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section 1— built-up roofing

FLAT ROOFS

section 2— built-up roofing

STEEP ROOFS

section 3— flashings

section 4— drainage

section 5— waterproofing and damp-proofing methods

metal protection

wood preservation

shingles

insulation

paving materials

"SPECIFICATION" pitch —The only pitch which meets the rigid requirements of the famous Barrett "SPECIFICATION" Roof. It is carefully refined from selected coal-tars, produced under exacting laboratory control. Bears Underwriters' Class A label.

PACKAGE: Bbls. or drums. **APPROX. SHPG. WT.: 350-500 lbs.**

steep roof pitch —A highly resilient and stable coal-tar pitch for slag surfaced steep roofs. Will not "bleed" or crack at extremes of heat or cold.

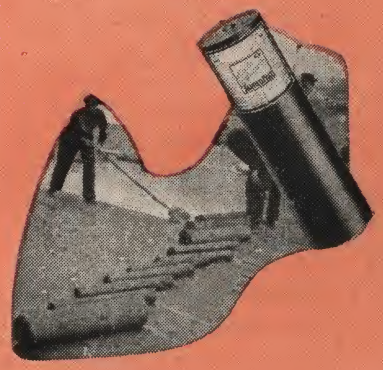
PACKAGE: Drums. **APPROX. SHPG. WT.: 400 lbs.**

"SPECIFICATION" felt —A carefully selected and fabricated rag-stock felt with a special coal-tar saturant. Made especially for use with Barrett "SPECIFICATION" Pitch. Bears Underwriters' Class A label.

ROLL: 432 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**

double thick tarred felt —A heavy duty tarred felt for use as a sheathing or base sheet. An effective weather barrier for use between walls or under slate and tile roofs.

ROLL: 216 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**



asphalt felts —High grade felts used with ANCHOR Asphalt or S. I. S. Cement in steep roof construction and as a general utility sheathing.

ROLL: No. 15—432 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**
No. 30—216 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**

waterproofing fabric —A heavy cotton fabric super-saturated with pitch (or asphalt). For membrane waterproofing.

ROLL: 50 sq. yds., 36" wide. **APPROX. SHPG. WT.: 40 lbs.**

S. I. S. roofing —A "prefabricated" built-up type roof covering. S. I. S. roofing has a 19" selvage, providing complete **double** coverage of roof area. Exposed 17" portion is mineral surfaced, permitting a variety of colors.

ROLL: 108 sq. ft., 36" wide, 19" selvage **APPROX. SHPG. WT.: 60 lbs.**

S. I. S. cement —A heavy waterproof adhesive made especially for use with S. I. S. Roofing. It is applied cold—comes ready for use.

PACKAGES: 55 gal. containers. **APPROX. SHPG. WT.: 495 lbs.**
5 gal. containers. **APPROX. SHPG. WT.: 45 lbs.**
Carton (6 1-gal. containers). **APPROX. SHPG. WT.: 45 lbs.**
COVERAGE: One gallon covers approximately 50-75 sq. ft.

ANCHOR asphalt —A superior asphalt for slag or gravel surfaced built-up steep roofs or for use with S. I. S. roofing.

DRUMS: Approx. 450-500 lbs.

Plastic ELASTIGUM cement —A roofing cement made of asphalt mixed with asbestos fibres—a tough, durable combination. For use as a flashing cement or damp-proofing agent. Also useful for patching roof breaks. Easily applied by trowel—bonds readily with all surfaces.

PACKAGES: 500, 50, 10 lb. containers. **COVERAGE: Approx. 35-40 lbs. will cover 100 sq. ft. $\frac{1}{16}$" thick**

P. B. cement —A pitch-base cement particularly suited to cementing concealed flashings, cutoffs and the like, but usable as a general roof repair cement.

PACKAGES: 500, 50-lb. containers. **COVERAGE: Approx. 35-40 lbs. will cover 100 sq. ft. $\frac{1}{16}$" thick**

since 1854

between the world and the weather

Barrett leadership in the roofing and waterproofing industry dates back almost a century. Since the early days of built-up roof construction, Barrett has pioneered in the field, improving its materials, application methods and facilities stride for stride with the advance of the building industry.

Today, Barrett Bonded Roofs, designed to meet a multiplicity of different conditions, are recognized everywhere as the standard of value for built-up roof construction, a ranking consistently held since the introduction of the famous Barrett "SPECIFICATION" Roof years ago.

Barrett introduced the practice of bonding roofs, definitely freeing building owners from periodical repair or maintenance expense. Barrett initiated the bonding of roof flashing, eliminating divided responsibility. Barrett was the first to establish a network of Approved Roofing Contractors; and Barrett's complete roof inspection service, introduced years ago, is unique in the roofing field.

That this complete service has obtained uniformly satisfactory results is demonstrated by thoroughly authenticated records of proved performance—many of the early installations having already given 30, 40 and 50 years of service without repair or maintenance expense. Repeat business from nationally recognized organizations substantiates these records and presents staunch testimony to the enduring qualities of Barrett roof construction.

We believe that such records of performance, together with the universal acceptance of this type of roof by leading architects, engineers and builders of modern structures, convincingly demonstrate that there are no better materials for built-up roof construction than high quality coal-tar pitch and roofing felt . . . and that no finer materials of this character are obtainable than those bearing the Barrett label.

Exchange Building, Boston, Mass.—Barrett Roofed 1889

famous Barrett installations

Empire State Building, New York
Waldorf-Astoria Hotel, New York
Chrysler Building, New York
R.C.A. Building, Rockefeller Center, New York
N. Y. Hospital, Cornell Medical College, New York
Grand Central Terminal, New York
Architects Building, New York
Archives Building, Washington, D. C.
Dept. of Commerce Building, Washington, D. C.
Supreme Court Building, Washington, D. C.
Jefferson Memorial, Washington, D. C.
Lincoln Memorial, Washington, D. C.
Post Office Building, Washington, D. C.
Field Building, Chicago
Post Office Building, Chicago
Drake Hotel, Chicago
National Board of Fire Underwriters Building, Chicago
Municipal Auditorium, St. Louis, Mo.
Post Office Building, Boston, Mass.
Christian Science Monitor Building, Boston, Mass.
Jefferson County Court House, Birmingham, Ala.
Post Office Building, Minneapolis, Minn.
Philadelphia Savings Fund Society Building, Philadelphia
Pennsylvania R. R. Station (30th St.), Philadelphia
State Capitol Building, Charleston, W. Va.
State Capitol Building, Baton Rouge, La.
Reynolds Building, Winston-Salem, N. C.
DuPont Building, Miami, Fla.
State Capitol Building, Lincoln, Neb.
Atomic Bomb Plant, Oak Ridge, Tenn.
Royal Bank Building, Montreal, Canada
Canadian Rail & Harbor Terminals, Toronto, Canada

CONTINENTAL CASUALTY COMPANY
CHICAGO, ILL.

Barrett Specification Roof
TYPE "AA"
20-Year Guaranty Bond

THE BARRETT DIVISION

Barrett "SPECIFICATION" Roofs carry Underwriters' Class A rating (the base rate for insurance). They are applied only by Barrett Approved Roofers, selected for experience, ability and integrity. Architects, engineers and builders rely on them completely.

The Barrett Bond

Barrett "SPECIFICATION," BLACK DIAMOND, and BARRETT Special Roofs, as mentioned in this manual, are bonded by the Continental Casualty company against repair and expense necessitated by ordinary wear and tear by the elements, for periods up to 20 years. Type "AA" is bonded for 20 years, type "A" for 15 years, according to specifications in this manual. Barrett also bonds its flashing systems for like periods when the flashing is installed in conjunction with the application of a Barrett Bonded Roof. This complete guarantee of satisfactory service is furnished under one contract, eliminating divided responsibility on this important work.

Barrett Specification Roofs

Barrett stipulates known quantities, known qualities and known application technique to produce a known result . . . a roof that will be free from upkeep and maintenance expense for at least the period covered by the bond.

Both Barrett "SPECIFICATION" Pitch and Barrett "SPECIFICATION" Felt are manufactured to be—and conceded to be—the best it is possible to produce. Barrett "SPECIFICATION" Pitch is preserved by water. Its life-prolonging oils are protected by the same dampness and moisture that weaken ordinary materials. It is self-healing; is virtually immune to climatic variations; and possesses creosote properties that outlaw fermention or the development of fungi. Roofing gravel, slag, slate or tile provides a fire-safe, practically indestructible wearing surface which protects the membrane, reflects heat and permits the use of a maximum of waterproofing materials.

The Barrett Inspector Making the Famous "Section Test"

Barrett roof inspection service

Barrett Roof Inspection Service, introduced years ago, is unique in the roofing field. The work of Barrett Approved Roofers is carefully inspected by technically trained Barrett inspectors assuring roof performance far beyond that prescribed in any guarantee or bond. The services of a Barrett Roof Inspector are available for consultation without cost or obligation to owners of buildings east of the Rockies. He will render a complete, detailed, unbiased report on conditions found and recommend adequate procedure where corrections or repairs are required.

Roof with a

The same Barrett "SPECIFICATION" Roof that protects some of America's greatest buildings today is pointing the way toward the newest concept in roof architecture. Functional roof design—new and greater utilization of hitherto wasted roof areas—will mark the buildings of the future.

Already, BARRETT Roofs are being used for this modern development. The famed roof gardens at Rockefeller Center in New York, as well as outdoor recreation spots and rooftop parking areas in various crowded neighborhoods, are roofed with Barrett materials, surfaced with modern tile or other functional covering. The added use to which these roof tops are put demands a roof that will give a great many years' service without trouble—and architects know they can rely on Barrett for just this sort of service.

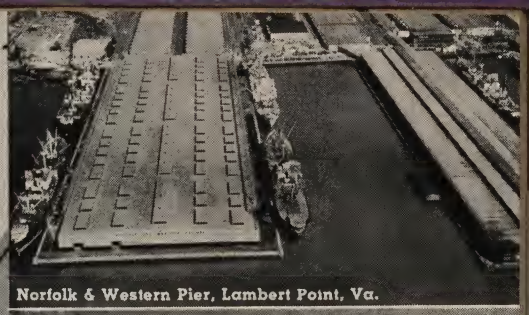
Just as Barrett "SPECIFICATION" Roofs proved their adaptability to new architectural forms in the decades since 1854, so too will these famous coal-tar pitch and felt roofs continue to provide the maximum in dependable, long-lasting weatherproof protection for the buildings of tomorrow.

Roof Garden, Rockefeller Center, N. Y.

Top: Hershey Sports Arena, Hershey, Pa.
Bottom: Heald Machine Co., Worcester, Mass.

Waldorf-Astoria Hotel, New York

future



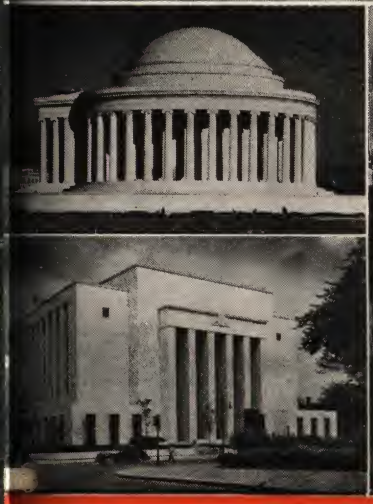
Norfolk & Western Pier, Lambert Point, Va.

Lord & Taylor, Scarsdale, N. Y.

Macy's, Jamaica, N. Y.

Kling Studios, Chicago

Modern Home, Long Island



Top: Jefferson Memorial, Washington, D. C.

Bottom: Dauphin County Court House, Harrisburg, Pa.

Field Building, Chicago

Top: J. W. Sexton High School, Lansing, Mich.
Bottom: Post Office, Minneapolis, Minn.

Empire State Building New York

Tabular Index to Specifications for BARRETT Roofs

Type Deck	Incline Limits (Inches per Foot)	Term of Bond	Type of Construction: Surfacing	Type of Construction: Plies of Felt	Type of Construction: Layers of Bitumen	Approx. Weight of Materials, Pounds per Square: Sheathing or Primer	Tarred Felt	Asphalt Felt	S.I.S. Roofing	Roofing Pitch	Steep Roof Pitch	Asphalt	Slag or Gravel	Total Weight Per Sq. (Lbs.)	Page No.
flat roofs															
Wood	0 to 2	20	Slag or Gravel	One Sheathing Paper Five No. 15 Felts	4	5	75			150			300	400	530*	12
		15		One Sheathing Paper Four No. 15 Felts	3	5	60			125			300	400	490*	12
		10		One Sheathing Paper One Double Thick Tarred Felt Two No. 15 Felts	3	5	60			125			300	400	490*	12
Poured Concrete or Gypsum	0 to 2	20		Four No. 15 Felts	5		60			200			300	400	560*	13
		15		Three No. 15 Felts	4		45			175			300	400	520*	13
Precast Concrete Slabs	0 to 2	20		Four No. 15 Felts	5		60			200			300	400	560*	15
		15		Three No. 15 Felts	4		45			175			300	400	520*	15
Precast Gypsum Slabs	0 to 2	20		Five No. 15 Felts	4		75			150			300	400	525*	14
		15		Four No. 15 Felts	3		60			125			300	400	485*	14
		10		One Double Thick Tarred Felt Two No. 15 Felts	3		60			125			300	400	485*	14
Insulated Steel	0 to 1	20		Four No. 15 Felts	5		60			200			300	400	560*	16
		15		Three No. 15 Felts	4		45			175			300	400	520*	16
Poured Concrete	0 to 1	Promenade Tile		Five No. 15 Felts	6		75			200					275■	17
	0 to ½	Double Slag or Gravel		Four No. 15 Felts	6		60			300			500	700	860‡	18
steep roofs															
Wood	2 to 5	20	Slag	One Sheathing Paper Five No. 15 Felts	5	5	75				140		275		495	22
		15		One Sheathing Paper Four No. 15 Felts	4	5	60				120		275		460	22
	3 to 9	15	Mineral Granules	One Sheathing Paper Two No. 15 Felts S.I.S. Roofing	3	5 5	30§	30†	120 120			54† 90			209 245	23
		10		One No. 30 Base Felt S.I.S. Roofing	2			30	120			60			210	23
Poured Concrete or Poured Gypsum	2 to 5	20	Slag	Four No. 15 Felts	5		60				160		275		495	24
		15		Three No. 15 Felts	4		45				140		275		460	24
	3 to 9	15	Mineral Granules	Two No. 15 Felts S.I.S. Roofing	4	9	30§	30†	120 120			72† 120			231 279	25
		10		One No. 15 Felt S.I.S. Roofing	3	9 9		15† 15§	120 120			54† 90			198 234	25
Precast Concrete or Gypsum	2 to 5	20	Slag	Five No. 15 Felts	5		75				140		275		490	26
		15		Four No. 15 Felts	4		60				120		275		455	26
	3 to 9	15	Mineral Granules	Two No. 15 Felts S.I.S. Roofing	3		30§	30†	120 120			54† 90			204 240	27
		10		One No. 30 Base Felt S.I.S. Roofing	2			30	120			60			210	27

* Based on slag. For gravel surfacing add 100 lbs. per sq.
‡ For gravel, add 200 lbs. per sq.
■ Weight of membrane only—Does not include wt. of tile surfacing.
† Cold application optional using asphalt felt and 2 gals. (approx. 18 lbs.) of S.I.S. Cold Cement per coating.
§ For hot application.

FLAT ROOFS

inclines not exceeding 2 ins. to 1 ft.

sec. 1

advantages of pitch, and slag or gravel surfacing

There are certain characteristics of coal-tar pitch and felt roofs with an armored wearing surface of slag or gravel that make them superior to other types of built-up roofing. Among the most noteworthy are the following:

pitch preserved by water—The vital oils which are the weatherproofing elements of pitch are protected by the very dampness and moisture which rot ordinary materials. This factor adds considerably to the serviceability and life of coal-tar pitch and felt roofs.

self-healing qualities of pitch—One of the most important advantages of pitch is its ability to "heal" itself. Small cracks caused by heavy traffic or accidental damage to the roof automatically fuse together and disappear. This mobility also allows the membrane to conform to slight irregularities in the roof deck.

insurance savings—Barrett "SPECIFICATION" Roofs take the base rate of insurance. They require no painting or other coating. Their moderate first cost and enduring qualities effect a cost per year far below that of any other type of built-up roof. They provide a permanent part of permanent building construction.

protection of slag or gravel surfacing—The armored wearing surface of slag or gravel is firmly embedded in a dipper pouring of pitch, thus providing a practically indestructible top layer. It is fire-safe and helps to protect the waterproofing elements from the destructive rays of the sun.

flat roof classification

Roofs having inclines of not more than two inches in one foot are generally classified as flat roofs. The practical purpose of the flat roof or any roof is to protect the interior, the contents and the occupants of the building from rain, snow, heat and cold. In addition, a good roof should provide effectual protection against the spread of fire, prevent dampness, add to the character of the building and offer freedom from periodical repair and maintenance expense.

Barrett "SPECIFICATION" Roofs

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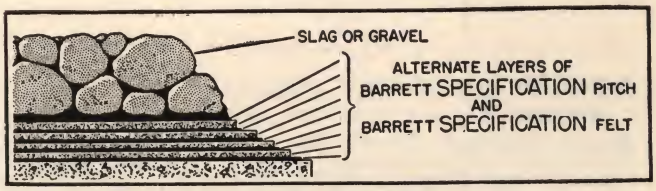
Only for flat roofs

Type "AA" Bonded for 20 years
Type "A" Bonded for 15 years

The Barrett "SPECIFICATION" Roof meets all the aforementioned requirements for flat roof construction. It is constructed of highest quality coal-tar pitch and roofing felt, properly applied in the membrane manner and surfaced with slag, gravel or similar approved surfacing.



Barrett "SPECIFICATION" Roofing

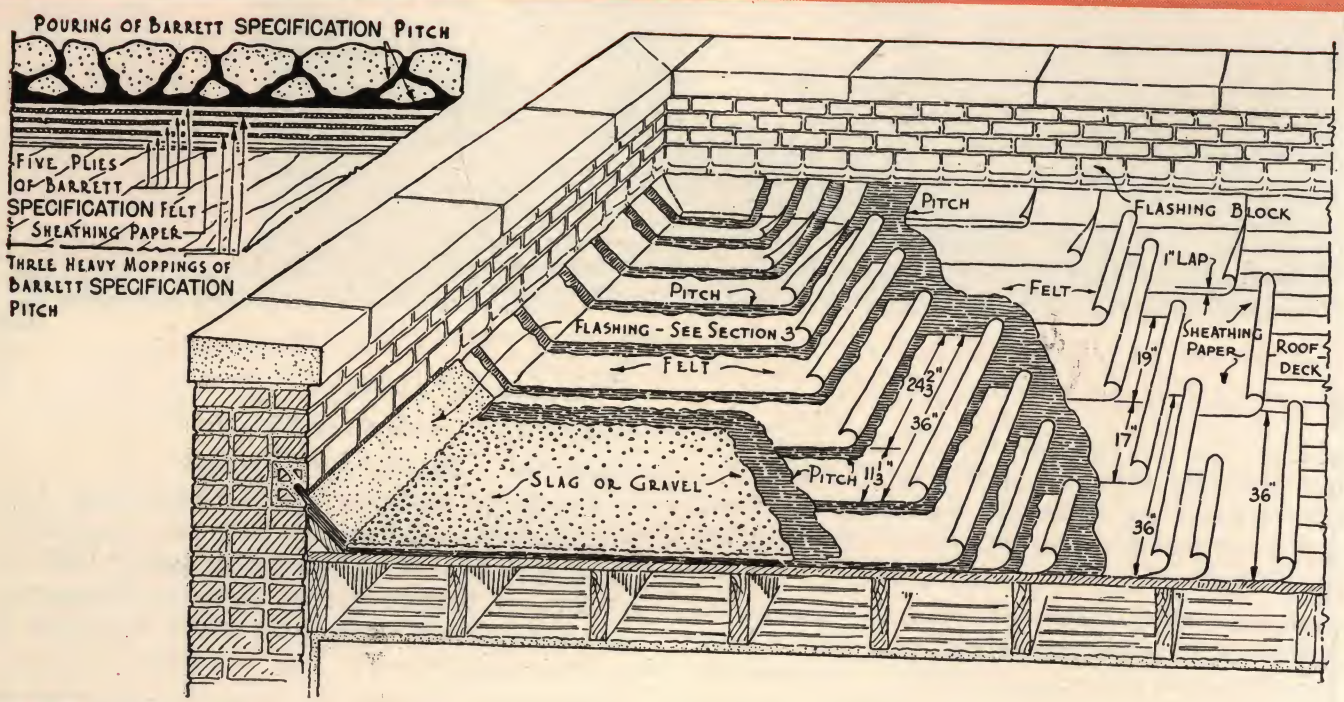
Barrett "SPECIFICATION" Pitch—The only pitch which meets the rigid requirements of the Barrett "SPECIFICATION" Roof, it is conceded to be the finest pitch it is possible to produce. It is preserved by water, self-healing, fungus-proof and prevents the development of fermentation.

Barrett "SPECIFICATION" Felt—Carefully fabricated from selected stock, Barrett "SPECIFICATION" Felt is a smooth-textured, uniform roofing felt manufactured under strict laboratory control. It is especially intended for use with Barrett "SPECIFICATION" Pitch to produce a roof of unmatched serviceability.

BLACK DIAMOND Roofs

Barrett also manufactures the time-tested BLACK DIAMOND Roofing Materials. BLACK DIAMOND Pitch and Felt meet the exacting requirements of recognized Government, ASTM and AREA specifications. When applied by Barrett Approved Roofers in accordance with Barrett requirements and specification procedure contained herein, BLACK DIAMOND Roofs are bonded against repair and maintenance expense for the periods stated.

WOOD DECKS
Inclines not exceeding 2" to 1'-0"



20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" — 5-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over boards), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Lay one (1) thickness of sheathing paper or unsaturated felt weighing not less than five (5) pounds per one hundred (100) square feet, lapping the sheets at least one (1) inch.

Second—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one and nail as often as is necessary to hold in place until remaining Felt is laid.

Third—Coat the entire surface uniformly with Barrett "SPECIFICATION" Pitch.

Fourth—Over entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing requirements.

Fifth—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than one hundred and fifty (150) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" — 4-PLY

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Fourth—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full nineteen (19) inch lap on each sheet so that in no place shall Felt touch Felt. (Balance of paragraph remains the same.)

GENERAL—Change "one hundred and fifty (150)" to "one hundred and twenty-five (125)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

10 YEAR BOND—"BARRETT" SPECIAL BUILT-UP ROOF — 3-PLY

COMPLETE SPECIFICATIONS:

Exactly the same as Type "A" above, except as follows:

Second—Over the entire surface lay one (1) ply of Double Thick Tarred Felt as a base sheet, lapping each sheet four (4) inches over preceding one and nail, along lapped edges, as often as is necessary to hold in place until remaining felt is laid. The base felt shall be turned up along all walls and vertical surfaces for a height of four (4) inches.

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

Where Insulation Is Required, See Detail on Page 20.

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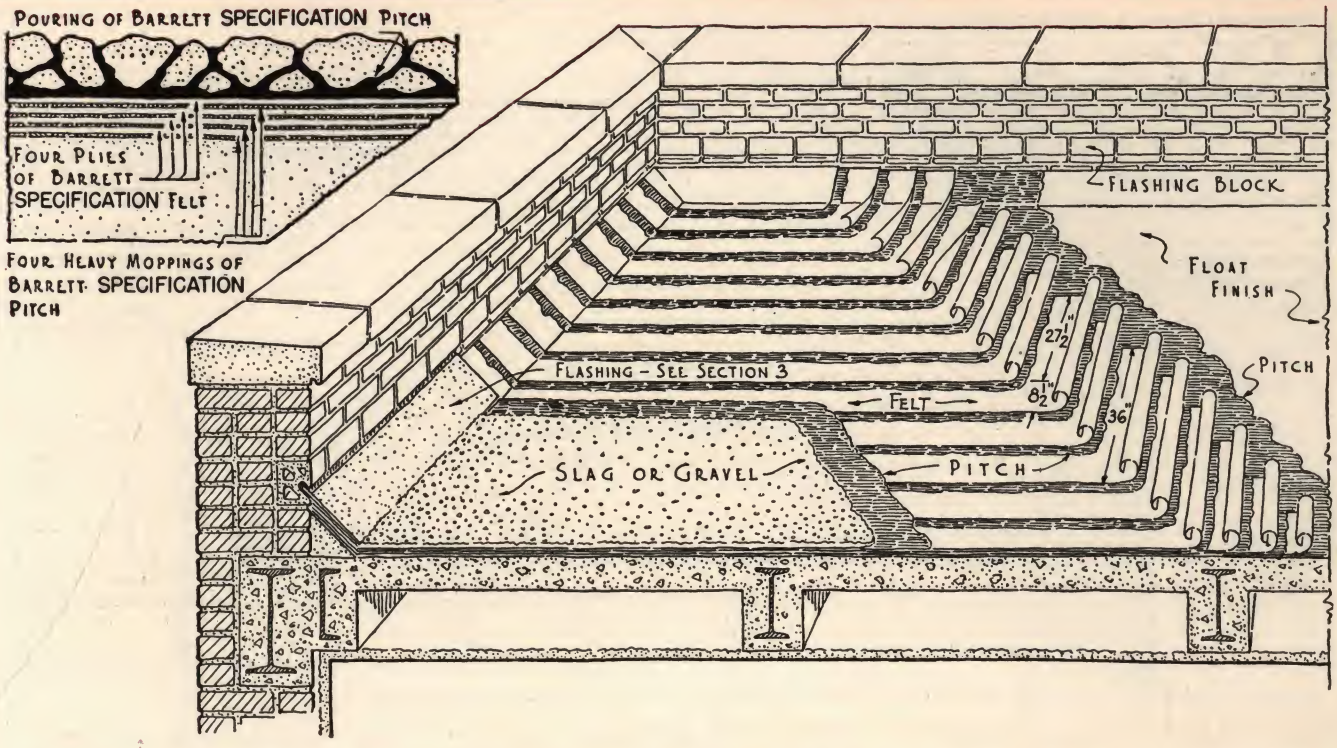


20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. Roof deck shall be properly graded to outlets. **On poured concrete decks having inclines exceeding one (1) inch to the foot roof deck shall permit nailing or wood nailing strips shall be provided to comply with Barrett's nailing requirements.**

APPLICATION OF ROOFING—First—Where roof deck is of **poured concrete,** coat uniformly with Barrett "SPECIFICATION" Pitch.

Where roof deck is of **poured gypsum,** strip mop with continuous moppings of Barrett "SPECIFICATION" Pitch two (2) feet wide with six (6) inch spacing between moppings.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing requirements.

Third—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "A," laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change the first sentence under "Second" to read as follows:

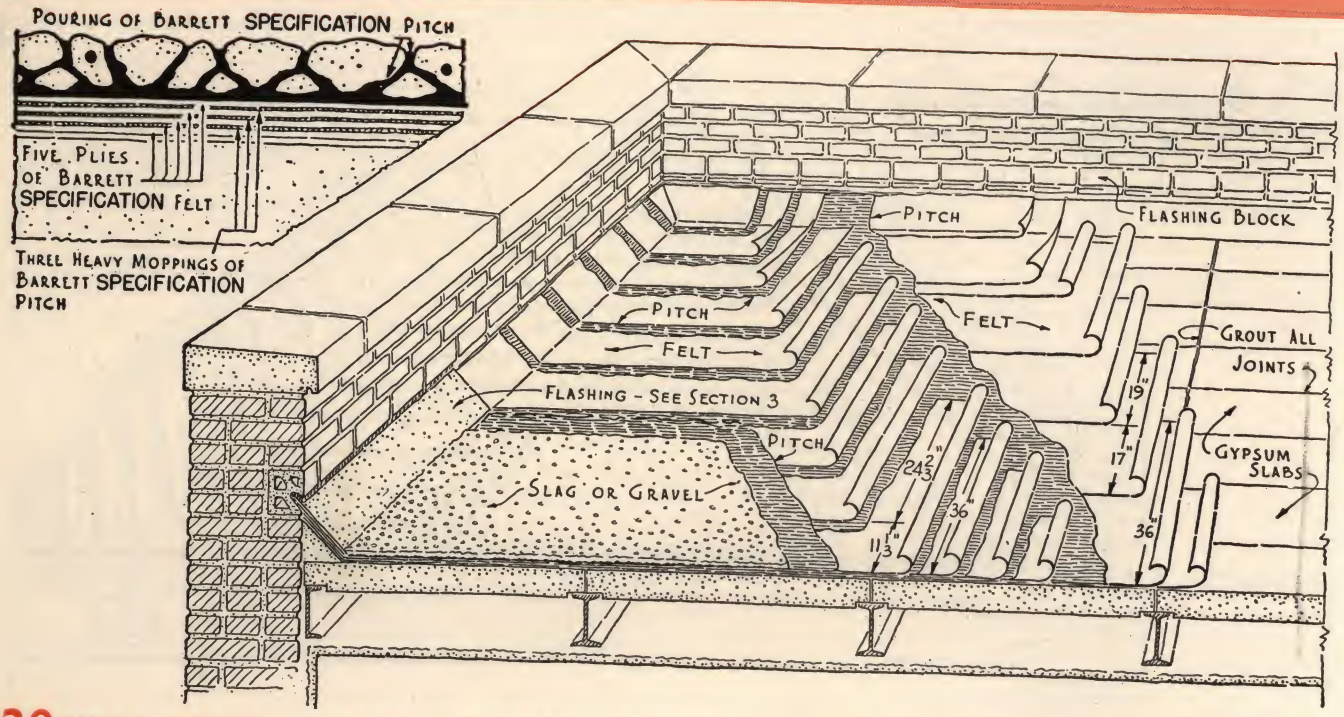
Second—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt. (The balance of this paragraph is the same as for Type "AA.")

GENERAL—Change "two hundred (200)" to "one hundred and seventy-five (175)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

Where Insulation Is Required, See Detail on Page 20.

PRECAST GYPSUM SLABS or METAL BOUND GYPSUM PLANK
Inclines not exceeding 2" to 1'-0"



20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" — 5-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over precast gypsum slabs or metal bound gypsum planks), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between precast gypsum slabs shall be properly grouted.

The roof deck shall be smooth, dry and free from loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, and nail as often as is necessary to hold in place until remaining Felt is laid.

Second—Coat the entire surface uniformly with Barrett "SPECIFICATION" Pitch.

Third—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing instructions. Nails shall not exceed seven-eighths (⅞) inch in length and shall be driven through flat tin discs one (1) inch or more in diameter.

Fourth—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than one hundred and fifty (150) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" — 4-PLY

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change the first sentence of paragraph headed "Third", to read as follows:

Third—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full nineteen (19) inch lap on each sheet so that in no place shall Felt touch Felt. (The balance of this paragraph is the same as for Type "AA".)

GENERAL—Change "one hundred and fifty (150)" to "one hundred and twenty-five (125)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

10 YEAR BOND—"BARRETT" SPECIAL BUILT-UP ROOF — 3-PLY

COMPLETE SPECIFICATIONS:

Exactly the same as Type "A" above, except as follows:

First—Over the entire surface lay one (1) ply of Double Thick Tarred Felt as a base sheet, lapping each sheet four (4) inches over preceding one and nail, along lapped edges, as often as is necessary to hold in place until remaining felt is laid. The base felt shall be turned up along all walls and vertical surfaces for a height of four (4) inches.

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

Where Insulation Is Required, See Detail on Page 20.

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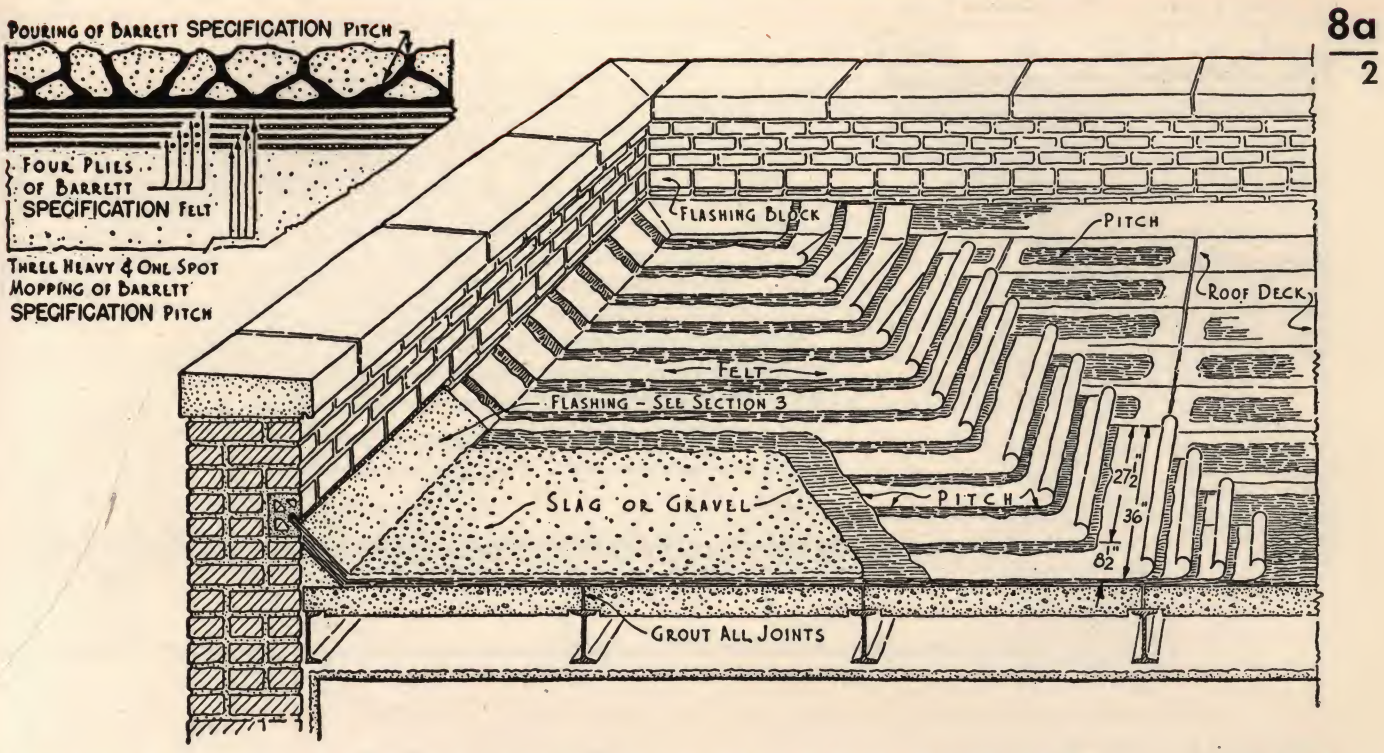


20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" — 4-PLY

Note—On inclines exceeding one (1) inch to one (1) foot provision shall be made for nailing strips set parallel with incline of roof and spaced to comply with Barrett's nailing requirements.

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over precast concrete slabs), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between concrete slabs shall be properly grouted.

The roof deck shall be smooth, firm, dry and free from loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Spot or strip mop each slab with Barrett "SPECIFICATION" Pitch, care being taken that pitch moppings are held back to within four (4) inches from the edge of each joint.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches, over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing requirements.

Third—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "A," laid in accordance with the Barrett specification (for use over precast concrete slabs), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change the first sentence of paragraph headed "Second", to read as follows:

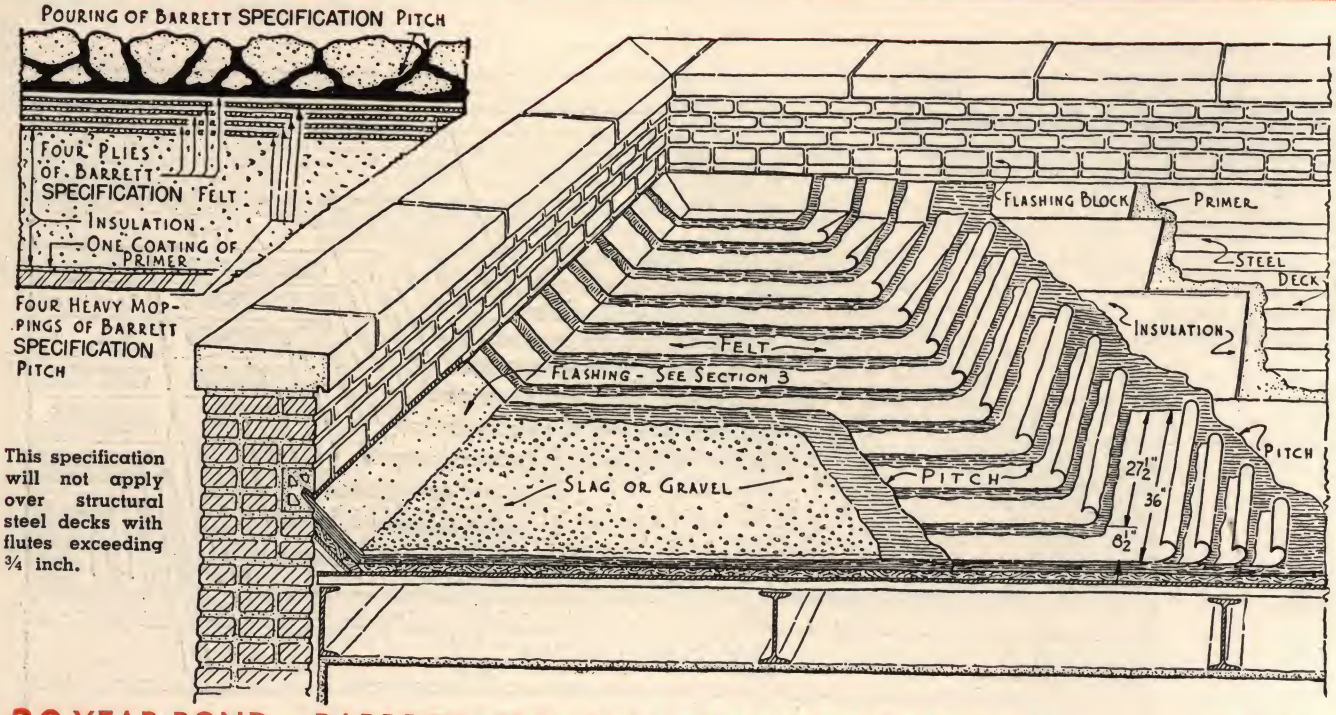
Second—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt.

GENERAL—Change "two hundred (200)" to "one hundred and seventy-five (175)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

Where Insulation Is Required, See Detail on Page 20.

INSULATED STEEL DECKS
Inclines not exceeding 1" to 1'-0"



This specification will not apply over structural steel decks with flutes exceeding ¾ inch.

20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" —— 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over insulated steel roof decks), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from rust, grease or loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Over the entire surface spread a uniform coating of BARRETT Steep Roofing Asphalt into which, while hot, embed approved rigid roof insulation. Over fluted decks insulation shall be mopped on underside with "CRYSTAL" Steep Asphalt.

Note—Where vapor seal course is to be provided under the insulation it is recommended that at least two plies of BARRETT Asphalt Felt be applied cemented with BARRETT Steep Roofing Asphalt.

Insulation shall be kept and applied in a dry condition and shall be firm and free from defects or loose materials. Cut-offs consisting of two (2) plies of BARRETT Waterproofing Fabric and three (3) moppings of BARRETT Steep Roofing Asphalt shall be applied as required, during the application of the insulation, and such cut-offs shall extend at least six (6) inches on roof deck and four (4) inches on top of insulation. No more insulation shall be applied than can be immediately covered with roofing. Care shall be taken that all ends are properly flashed so that at no time shall surface or edges of insulation be exposed.

Second—Coat the entire surface of the insulation with Barrett "SPECIFICATION" Pitch.

Third—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over the preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap, so that in no place shall Felt touch Felt. *Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge with soft-nosed nails of sufficient length to extend through the insulation and clinch. Nails shall be spaced not more than eight (8) feet apart.*

Fourth—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" —— 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "A," laid in accordance with the Barrett specification (for use over insulated steel roof decks), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change paragraph headed "Third" to read as follows:

Third—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24 2/3) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24 2/3) inch lap, so that in no place shall Felt touch Felt. (Balance of paragraph remains the same.)

GENERAL—Change "two hundred (200)" to "one hundred seventy-five (175)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

See Section No. 3 for Flashing Specifications and Details.

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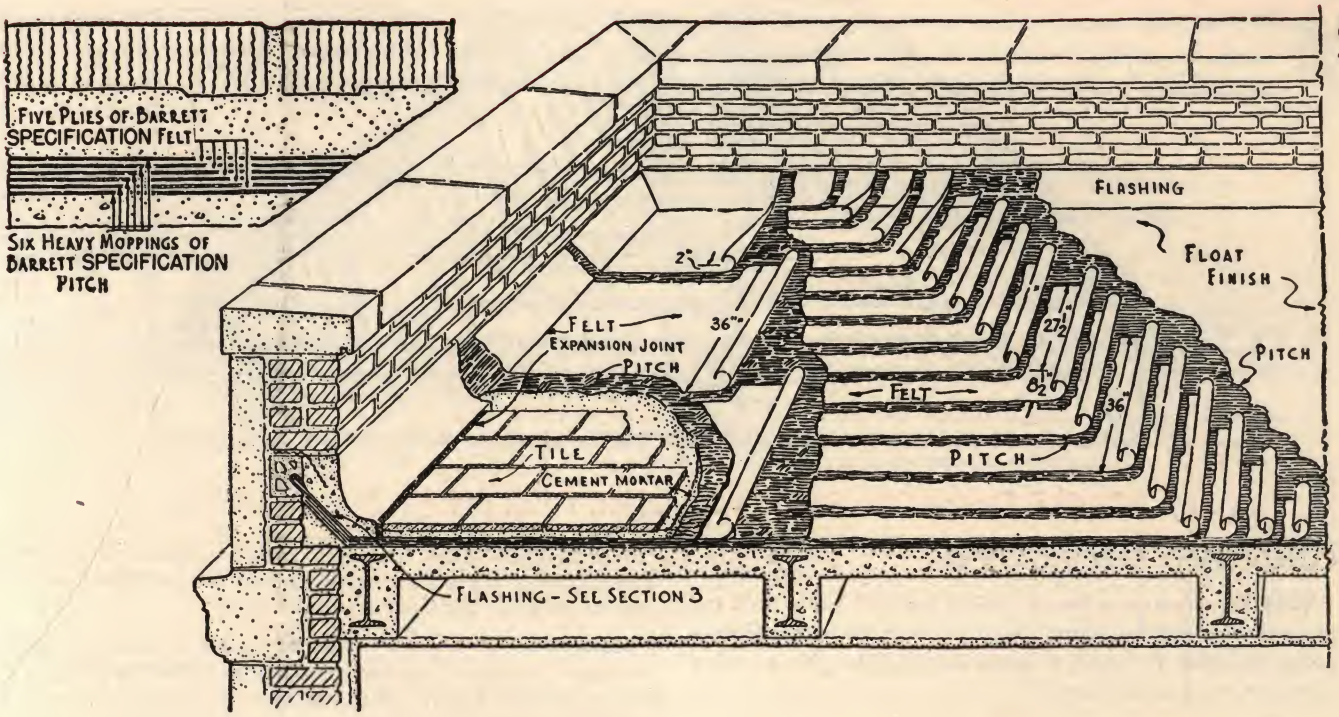


BARRETT "SPECIFICATION" 5-PLY ROOF OVER CONCRETE FOR USE UNDER PROMENADE TILE

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" 5-Ply Roof, and shall be laid in accordance with the Barrett specification (for use under promenade tile), by a roofing contractor approved by Barrett, who has had experience in this kind of work, and who can refer to similar installations where his work has proved satisfactory.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. Roof deck shall be properly graded to outlets. **The cement mortar in which tile is embedded shall not be used for grading the deck.**

APPLICATION OF ROOFING—First—Coat the concrete uniformly with Barrett "SPECIFICATION" Pitch.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt.

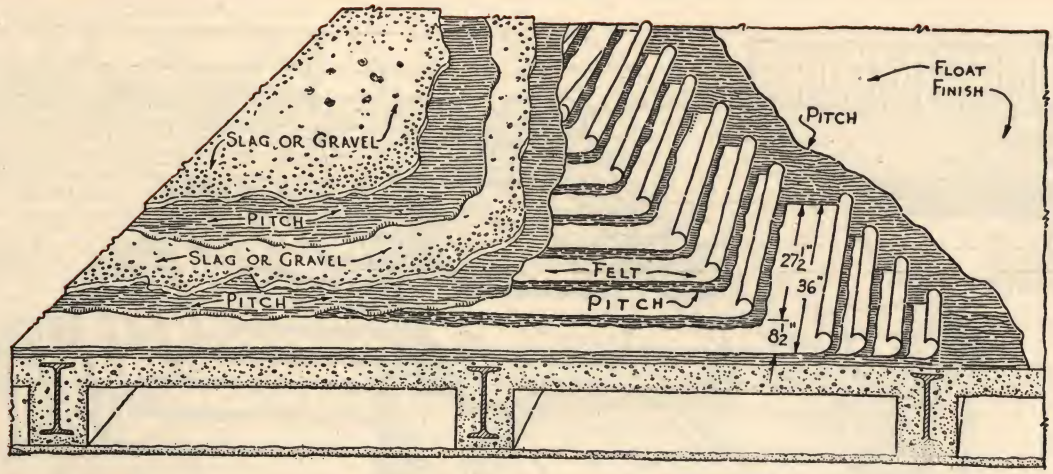
Third—Immediately preceding the laying of the tile, thoroughly clean the surface of the roof and mop with Barrett "SPECIFICATION" Pitch, into which, while hot, embed (1) layer of "SPECIFICATION" Felt, lapping each sheet two (2) inches over preceding one. Over this surface and immediately preceding the laying of the tile spread a heavy uniform coating of Barrett "SPECIFICATION" Pitch. No more of the roof surfaces shall be covered with the final or last ply of Felt and mopping of Pitch than is covered at the same time with tile and is necessary to allow for proper connections.

See Section No. 3 for Flashing Specifications and Details.

Over the Felt and Pitch roofing thus laid, 1 x 6 x 9-inch vitrified clay tile (approved by the architect) shall be set in approx. three-fourths (¾) inch to one (1) inch of Portland Cement Mortar (1 to 3 mix) and joints grouted full with Portland Cement Mortar (1 to 2 mix). The tile shall be laid to show three-sixteenths (3/16) inch to one-fourth (¼) inch joints. Expansion joints three-fourths (¾) inch wide filled with a plastic mixture (approved by the architect) shall be provided between the tile and all flashings, and either metal or mastic expansion joints shall be provided throughout the roof surface as may be necessary to take care of expansion. All expansion joints shall extend from the top of the tile through the cement mortar to the Felt and Pitch waterproofing and in no case shall expansion joints be spaced more than twenty (20) feet apart.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F. The roofing contract shall be awarded to a roofing contractor approved by Barrett, who has had experience in this kind of work, and who can refer to similar installations where his work has proved satisfactory.

POURED CONCRETE DECKS
Inclines not exceeding ½" to 1'-0"
UTILITY TYPE SURFACINGS



4-PLY DOUBLE SURFACED ROOF FOR UTILITY OR SPRAY POND SERVICE

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" 4-ply Roof, laid in accordance with the Barrett specification (for use over concrete—double surfacing for utility or spray pond service), by a roofing contractor approved by Barrett.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry, properly graded to outlets, and free from loose material.

APPLICATION OF ROOFING—First—Coat the concrete uniformly with Barrett "SPECIFICATION" Pitch.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt.

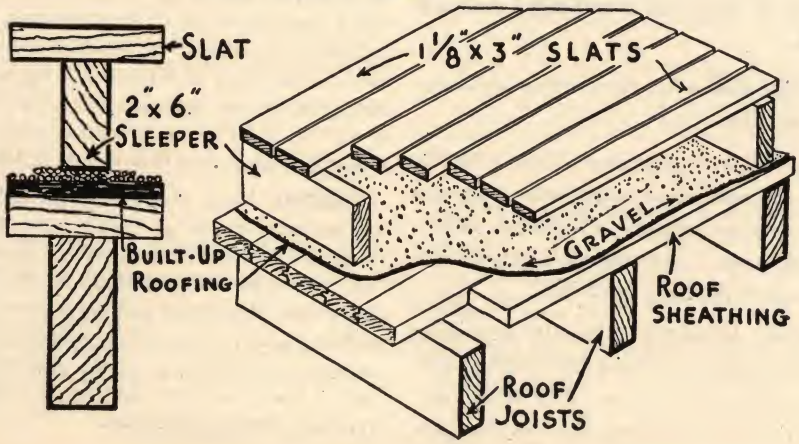
Third—Immediately preceding the application of surfacing material, thoroughly clean the surface of the roofing, after which over the entire surface, pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel, or three hundred (300) pounds of slag for each one hundred (100) square feet.

Fourth—Remove all loose or excess gravel or slag by lightly sweeping all surfaces and immediately follow with hot pouring of Barrett "SPECIFICATION" Pitch, applied to all surfaces, into which, while hot, embed not less than three hundred (300) pounds of gravel, or two hundred (200) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) to five-eighths (⅝) inch in size, dry and free from dirt. All gravel or slag shall be firmly embedded in Pitch so that no loose particles appear in finished job. The finished surface may be lightly rolled if necessary.

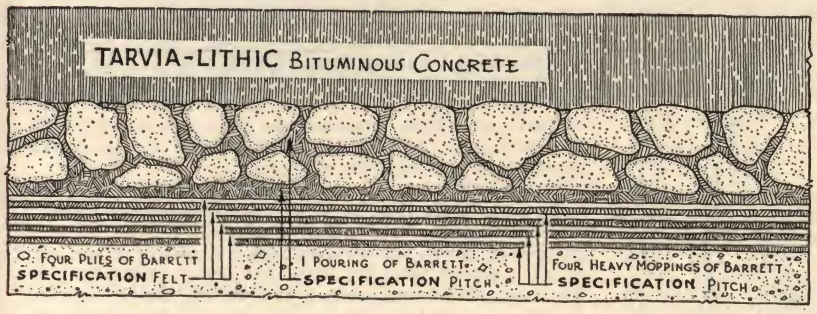
GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than three hundred (300) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roofing contract shall be awarded to a roofing contractor, approved by Barrett, who has had experience in this kind of work, and can refer to similar installations where his work has proved satisfactory.

SUGGESTED DETAIL FOR WALKWAY OR DUCK BOARD DECK OVER GRAVEL SURFACED ROOFING



Shown are typical details covering the application of Utility Type Surfacings over built-up roofs. Barrett will furnish specifications upon request for the following types of surfacing finish, including flagging of slate, granite, or stone, in regular or random dimensions, when applied over roofing or waterproofing membrane: **8a/2**

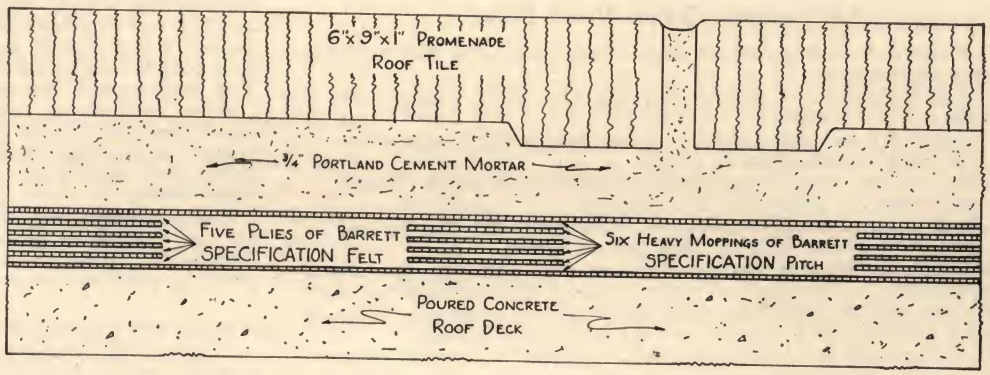


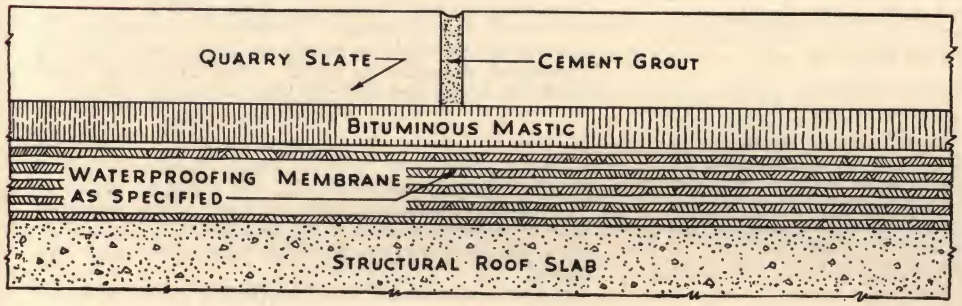
"TARVIA-LITHIC" Bituminous Concrete Surfacing

Architect's Note: — Where a wearing surface of bituminous concrete is desired as, for example, in the utilization of roof areas for automobile parking spaces, etc., specifications will be submitted on request.

Since this type of Barrett surfacing is available only at certain locations, Barrett should be contacted during preparation of specifications.

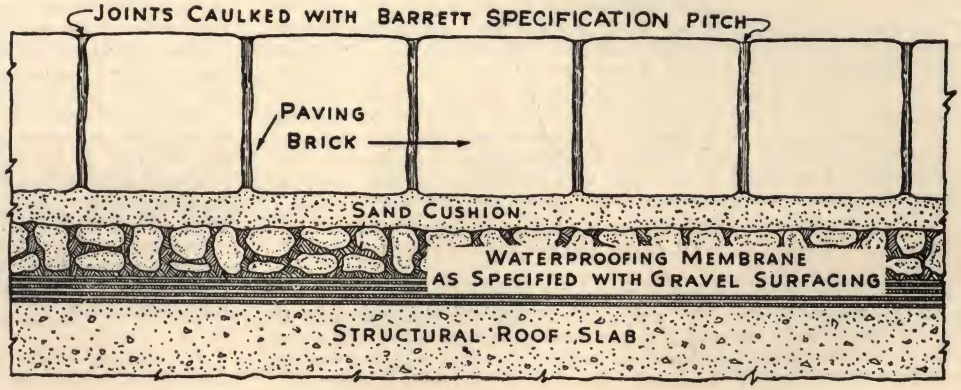
Promenade Tile Surfacing



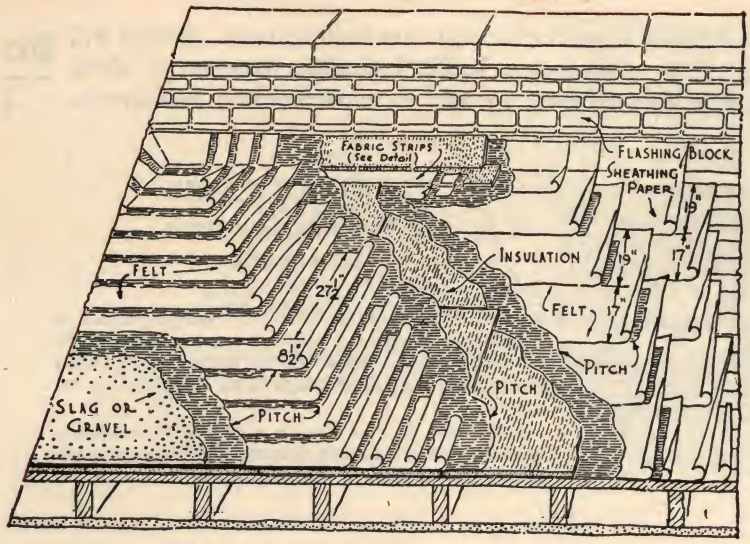


Quarry Slate Promenade Surfacing

Paving Brick Traffic Surfacing



ROOF INSULATION DETAILS—recommended where Barrett bonded roofs are installed over rigid roof insulation



Application Over Wood Deck

When used as a base for Barrett Bonded Roofs, insulation shall meet the following requirements:

1. Shall be sufficiently firm to withstand roof traffic without compressing or crushing.
2. Shall be of such composition to receive and hold all nails where the roofing specifications so require.
3. Shall present a smooth even surface and be thoroughly dry before and during the application of the roofing.
4. Shall be mechanically fastened or otherwise anchored to the roof deck in a manner which is acceptable to Barrett.

When rigid insulation is adequately protected by a waterproofing course or vapor barrier as described, all roofing applied over the insulation shall be solid mopped in accordance with specifications for use over concrete decks, as outlined in this manual, with the following exceptions:

Over cork board and impregnated or coated types of insulation, roofing shall be applied in channel-mopped coats of pitch over the insulation. Moppings shall be two (2) feet wide with six (6) inch spacing between moppings. On slopes in excess of one (1) inch to the foot, insulation shall be mechanically secured to the deck. On slopes in excess of one-half (½) inch to the foot, each ply of felt shall be nailed six (6) inches from top edge and spaced in accordance with nailing requirements.

When insulation is installed directly over wood on metal-bound gypsum planks, or precast gypsum decks without the protection of a waterproofing course or vapor barrier, and when conditions of humidity and condensation are not involved, roofing specifications for use over wood decks, as outlined in this manual, shall be followed, except that the rosin sized sheathing may be omitted over the insulation. All nails shall penetrate through the entire thickness of the insulation and into the deck not less than five-eighths (⅝) inch.

WOOD, PRECAST GYPSUM SLABS OR METAL-BOUND GYPSUM PLANKS

A waterproofing course or vapor barrier shall be applied as follows: Over the entire surface lay two (2) plies of sheathing weighing not less than five (5) pounds per 100 sq. ft., lapped nineteen (19) inches and nailed only as often as necessary to hold in place. Over the sheathing course should then be installed two (2) plies of tarred felt, each sheet lapped nineteen (19) inches over the preceding one. If nailing is required it should be done approximately two (2) inches from the upper edge only. The felt should then be mopped back seventeen (17) inches on each sheet, or up to but not beyond the nail course—followed by a uniform and continuous pitch coating over the entire top surface into which, while hot, the insulation is embedded. The built-up roofing as specified should then be immediately applied over the insulation.

POURED CONCRETE, POURED GYPSUM OR PRECAST CONCRETE DECKS

In applying waterproofing course over poured concrete or poured gypsum decks, it is important that the surface to which the waterproofing is applied be dry, smooth, firm and free from loose materials. Where the roof deck is of poured concrete, it should be uniformly coated with hot roofing pitch. Where the roof deck is of poured gypsum, it should be channel-mopped with continuous moppings of hot pitch approximately two (2) feet wide with channel spacings approximately six (6) inches wide between moppings.

Where the roof deck is of precast concrete slabs, spot or strip mop each slab with hot roofing pitch, care being taken that pitch moppings are held back four (4) inches from the edge of each joint.

Over the entire surface should then be installed two plies of tarred felt, each sheet lapped nineteen (19) inches over preceding one, mopped with hot roofing pitch the full width of the 19-inch lap on each sheet, so that in no place shall felt touch felt. The entire felt surface should then be coated with a uniform and continuous mopping of pitch into which, while hot, the insulation is embedded. The built-up roofing, as specified, should then be immediately applied over the insulation.

When insulation is installed directly over poured concrete decks without the protection of a waterproofing course or vapor barrier, and where conditions of humidity and condensation are not involved, the concrete deck shall be solidly mopped with hot pitch, into which, while hot, the insulation shall be embedded. The roofing applied over the insulation shall be solid mopped in accordance with the specifications for use over concrete decks.

When insulation is installed directly over poured gypsum decks or precast concrete slabs, where conditions of humidity and condensation are not involved, it is recommended that a two-ply waterproofing course be applied as a base to receive the insulation, which provides complete embedment of the insulation.

When insulation is installed over any deck having slopes over one (1) inch to the foot and where a Barrett bonded roof is to be installed, Barrett's representative or district office should be consulted for requirements and specifications.

Where a Barrett bonded roof is to be installed over an old roof membrane previously applied over insulation, Barrett's representative or district office should be consulted for requirements and specifications.

WATER CUT-OFFS

Water cut-offs consisting of two plies of pitch waterproofing fabric or tarred felt and alternate moppings of pitch should be installed at all edges of insulation and adjoining parapet walls, curbs, or other vertical surfaces. Supplementary and continuous cut-offs of similar construction should also be installed throughout the insulation approximately every 25 feet in one direction only, unless it is considered desirable to install further cut-offs in cross directions, as for example adjacent to hips, ridges, etc.

GENERAL

Where metal base flashing, gravel guards or flanges for roof drains, ventilators, etc., are required, creosoted wood nailing strips of a thickness equal to the insulation shall be properly secured to the structural roof deck. Nailing strips shall be two (2) inches wider than metal roof flange.

In the construction of a waterproofing course or vapor barrier, the Felt should be turned up sufficiently at all vertical edges to allow for lapping back over the top surface of the insulation at least 6". This lap should then be cemented down and coated with pitch prior to the application of the roofing.

Care should be taken to prevent tears, breaks, or ruptures of any kind in the vapor barrier which might interfere with its effectiveness.

When necessary to nail insulation to the deck and through the waterproofing course, the nails used should not penetrate to the underside of the roof deck.

Where multiple layers of insulation are installed, each succeeding layer shall break joints with the underlying layer and shall be set in hot bituminous moppings.

The insulation shall be immediately covered with roofing and edges shall be stripped and sealed after each day's work, or whenever necessary due to weather conditions.

For methods of installing Rock Wool Insulation in connection with built-up roofs, see page 62.

"BARRETT" SPECIAL STEEP ROOFS

Steep Roof Classification

Roofs having inclines in excess of two inches in one foot are generally classified as steep roofs.

Such roofs are not ordinarily required to hold rain water, slush, ice and snow for protracted periods. They are, however, subjected to longer periods of exposure to the harmful actinic rays of the sun, and should be constructed so as to provide complete protection under all prevailing conditions.

Roof Construction

Great care in construction and exacting inspection are desirable in steep roof work. The use of the proper materials and the proper application thereof are of paramount importance. Materials used in the construction of BARRETT Built-Up Roofs for steep surfaces are particularly suited to the requirements involved. Applied, they form a continuous waterproofing membrane which will not slide or rupture under normal deck stress or strain.

Under no circumstances should membrane coverings be left unprotected or exposed to the weather. For this reason, consistent with Barrett's policy of providing the most durable weathering surface, Barrett's steep roof construction is protected by crushed slag or by mineralized aggregate obtainable in a variety of colors.

Application

Roofers approved by Barrett are skilled in the application of steep roof construction, and can be relied upon to handle this type of work with the same degree of efficiency as is obtained on all Barrett specification work.

The specifications in this section are recommended for use under the specific conditions as outlined.

"BARRETT" STEEP ROOF PITCH

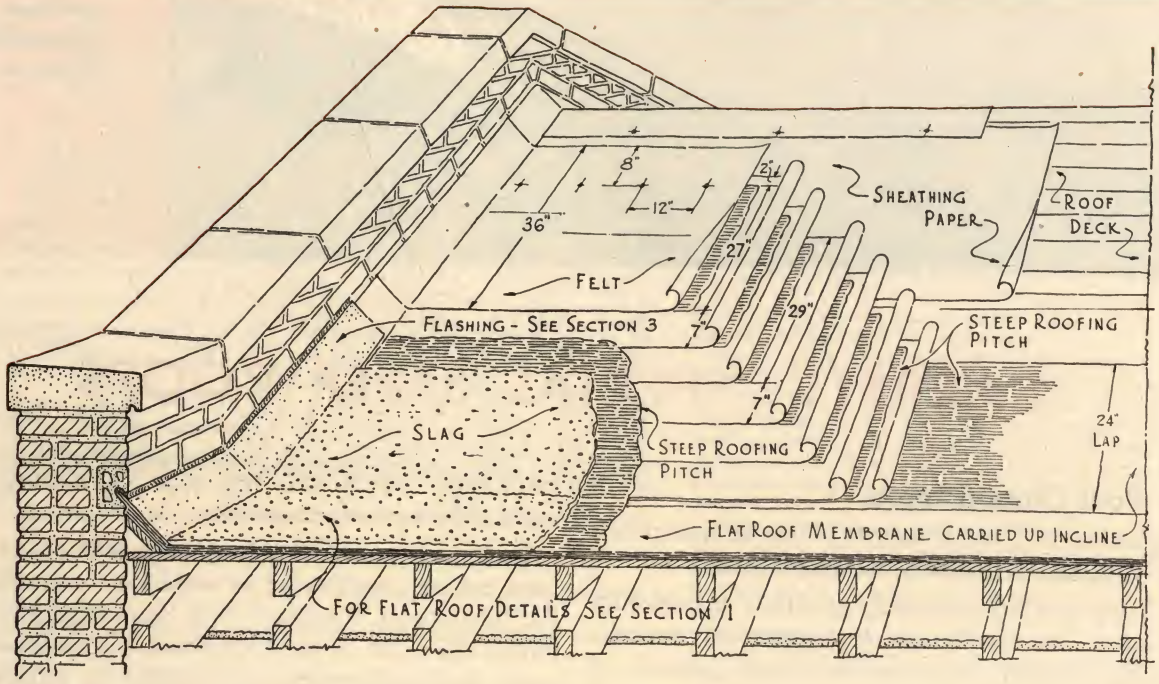
A Revolutionary, New Building Product

BARRETT Steep Roof Pitch combines with **unusual stability** all the unmatched **waterproofing** and **weatherproofing** characteristics of coal tar pitch. The development of this revolutionary, new building product makes coal tar pitch, felt and gravel roofs possible on many types of buildings formerly denied this superior type of roof construction.

Practical installation experience under extreme conditions has demonstrated that BARRETT Steep Roof Pitch does not slide or "bleed" at the highest temperatures to which roofs are subjected and does not crack or lose bond during extreme cold.

Roofs constructed of BARRETT Steep Roof Pitch and Barrett "SPECIFICATION" Felt with a fire-safe slag wearing surface, applied according to Barrett specifications by Barrett Approved Roofers, are bonded by the Continental Casualty Company of Chicago against repair and maintenance expense for periods up to 20 years.

WOOD DECKS
Inclines over 2″ and not exceeding 4″ to 1′-0″



20 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 5-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knotholes, and shall be firm, and free from loose material.

APPLICATION OF ROOFING—First—Lay one (1) thickness of sheathing paper or unsaturated felt weighing not less than five (5) pounds per one hundred (100) square feet, lapping the sheet at least one (1) inch. The sheathing paper shall be nailed sufficiently to hold it in place during application of the roofing.

Second—Over the entire surface lay five (5) plies of Barrett "SPECIFICATION" Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-nine (29) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin discs, eight (8) inches from the upper edge and nails shall be spaced not more than one (1) foot apart.

Third—Mop back on each sheet for a distance of twenty-seven (27) inches with BARRETT Steep Roofing Pitch. The Felt shall follow and shall be firmly embedded into the hot moppings as applied. Care shall be taken that the Pitch moppings are even with lower edge of each overlying sheet, and that the finished Felt surface is free and clean of Pitch drippage.

Fourth—Over the entire surface, apply a uniform coating of BARRETT Steep Roofing Pitch into which, while hot, firmly embed not less than two hundred and seventy-five (275) pounds of slag for each one hundred (100) square feet of finished roofing. The slag shall be from three-sixteenths ($\frac{3}{16}$) to one-half (½) inch in size, shall be dry and free from dirt, and shall be embedded into the surface mopping immediately. If roofing is applied during cool weather, or slag is damp, slag shall be heated and dried, so that it is warm when applied to the roof. The slag surfacing shall be continuous; shall cover and shall be firmly embedded into the surface coating.

GENERAL—Care shall be taken during application that Felt is laid without wrinkles or buckles. Not less than eighty (80) pounds of Pitch shall be used for constructing the membrane, and not less than sixty (60) pounds of Pitch shall be used for embedding the slag in constructing each one hundred (100) square feet of completed roof.

Note: BARRETT Steep Roof Pitch shall be heated in tubeless kettles, or kettles with tubes equipped with a thermostatic control unit.

The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces, not less than twenty-four (24) inches before the application of the Steep Roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, see Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) That the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Exactly the same as for twenty (20) year bond except for the following changes:

APPLICATION OF ROOFING—Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-seven and one-half (27½) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin discs, nine and one-half (9½) inches from the upper edge and nails shall be spaced not more than one (1) foot apart.

Third—Mop back on each sheet for a distance of twenty-five and one-half (25½) inches with BARRETT Steep Roofing Pitch. (Balance of paragraph remains the same.)

GENERAL—Change "eighty (80)" to "sixty (60)" pounds of Pitch. Change "period of Twenty (20)" to "period of fifteen (15)" years.

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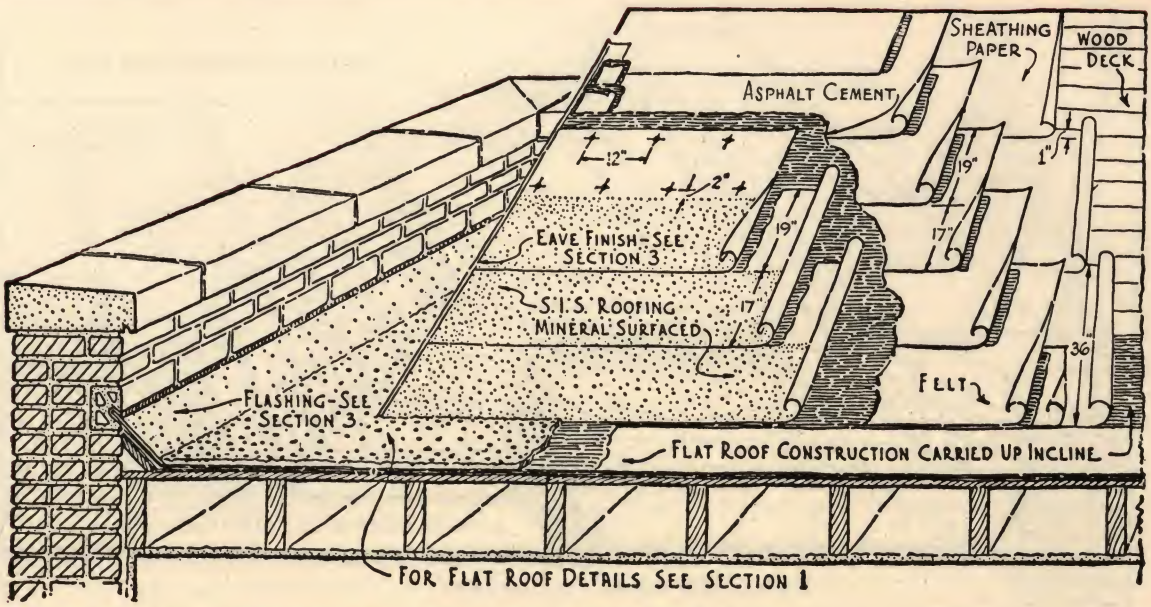


15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing and laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material.

APPLICATION OF ROOFING—Note—The S. I. S. Roofing shall be cut in strips twelve (12) to eighteen (18) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

First—Lay one thickness of sheathing paper or unsaturated felt weighing not less than 5 lbs. per 100 sq. ft. lapping the sheets at least one inch.

Second—(For cold application—Barrett S. I. S. Cement)—Over the entire surface lay two (2) plies of BARRETT No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

Second—(For hot application—Barrett ANCHOR Roofing Asphalt)—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Felt or No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

Third—Coat back on sheet for a distance of seventeen (17) inches with Barrett S. I. S. Cement or ANCHOR Roofing Asphalt. The Felt shall be firmly embedded into the coatings as applied. Care shall be taken that the coatings are even with lower edge of each overlying sheet, and that the finished Felt surface is free from drippage.

Fourth—Over the entire surface spread a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt, into which shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to the incline of the roof, lapping the sheets the full width of the nineteen (19) inch selvage. All sheets of Barrett S. I. S. Roofing shall be securely fastened in place with a double course of one (1) inch barbed roofing nails driven through flat tin discs, and placed along the selvage side of the sheet. Nailing courses should be staggered and nails spaced not more than twelve (12) inches apart. The lower nailing course shall be held back two (2) inches from the mineral surfacing.

(At the option of Barrett's inspector, where inclines exceed 4 inches to the foot, S. I. S. Roofing may be laid vertically or approximately parallel with the slope of the roof.)

Fifth—Spread over the entire surface of the nineteen (19) inch selvage a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt into which shall be immediately rolled the following sheet of S. I. S. Roofing.

Sixth—All end laps shall be over-lapped at least six (6) inches. The underlying selvage portion of each end lap shall be nailed with four (4) nails through flat tin discs spaced four (4) inches apart starting one (1) inch from the lower edge of selvage. The six (6) inch lap shall be coated with Barrett ANCHOR Roofing Asphalt or S. I. S. Cement and the overlapping sheet thoroughly pressed down.

GENERAL—Care shall be taken during application that felt and S. I. S. Roofing are laid without wrinkles or buckles. Not less than thirty (30) pounds of ANCHOR Asphalt or two (2) gallons of S. I. S. Cement per coating shall be used for each one hundred (100) square feet of completed roofing.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of fifteen (15) years from date of completion in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) Where both flat and steep areas are involved on a single job, the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

10 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing and laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for ten (10) years from date of completion, in accordance with Note No. 1 of said specification.

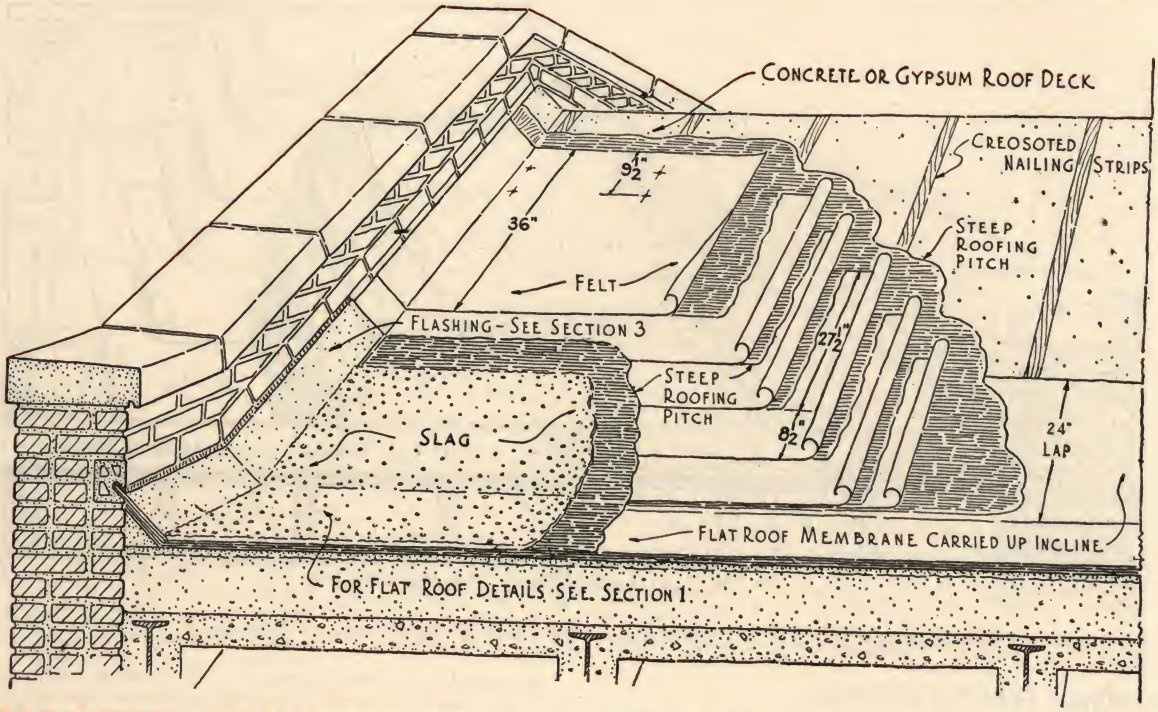
COMPLETE SPECIFICATIONS:

Exactly the same as for fifteen (15) year bond except for the following changes:

APPLICATION OF ROOFING—Omit first, second and third paragraphs and substitute the following: "Over the entire surface lay one (1) ply of BARRETT No. 30 Asphalt Felt as a base sheet lapping each sheet four (4) inches over preceding one and nailing along lapped edge with barbed roofing nails through flat tin discs spacing the nails not more than eighteen (18) inches apart."

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

POURED CONCRETE or POURED GYPSUM
Inclines over 2" and not exceeding 4" to 1'-0"



20 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum on steep surfaces) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. The concrete or gypsum shall permit of nailing, or creosoted wooden nailing strips shall be provided. Where nailing strips are provided, they shall be laid parallel with the incline of the roof and shall be spaced not more than three (3) feet apart.

APPLICATION OF ROOFING—First—Where roof deck is of **poured concrete,** coat uniformly with BARRETT Steep Roofing Pitch.

Where roof deck is of **poured gypsum,** strip mop with continuous moppings of BARRETT Steep Roofing Pitch two (2) feet wide with six (6) inch spacing between moppings.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Felt at right angles to incline of the roof, lapping each sheet twenty-seven and one-half (27½) inches over preceding one. Each sheet shall be nailed with one (1) inch nails through flat tin discs, nine and one-half (9½) inches from the upper edge, and nails shall be spaced not more than one (1) foot apart. Where nailing strips are used, Felt shall be nailed with two (2) nails through flat tin discs (at each nailing strip) placed seven and one-half (7½) inches and nine and one-half (9½) inches respectively from upper edge of each sheet.

Third—Mop back on each sheet the full distance of the twenty-seven and one-half (27½) inch lap with BARRETT Steep Roofing Pitch. The Felt shall follow and shall be firmly embedded into the hot moppings as applied. Care shall be taken that pitch moppings are even with lower edge of each overlying sheet and that the finished Felt surface is clean and free from Pitch drippage.

Fourth—Over the entire surface apply a uniform coating of BARRETT Steep Roofing Pitch, into which, while hot, firmly embed not less than two hundred and seventy-five (275) pounds of slag for each one hundred (100) square feet of finished roofing. The slag shall be from three-sixteenths ($\frac{3}{16}$) to one-half (½) inch in size, shall be dry and free from dirt, and shall be embedded into the surface mopping immediately. If roofing is applied during cool weather, or slag is damp, slag shall be heated and dried, so that it is warm when applied to the roof. The slag surfacing shall be continuous, and shall cover and be firmly embedded in the surface coating.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than one hundred (100) pounds of Pitch shall be used for constructing the membrane and not less than sixty (60) pounds of Pitch shall be used for embedding the slag in constructing each one hundred (100) square feet of completed roof.

Note: BARRETT Steep Roof Pitch shall be heated in tubeless kettles, or kettles with tubes equipped with a thermostatic control unit.

The Pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the Steep Roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, see Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) That the steep roof area be roofed in conjunction with flat roof area.
(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification, for use over poured concrete or poured gypsum on steep surfaces by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

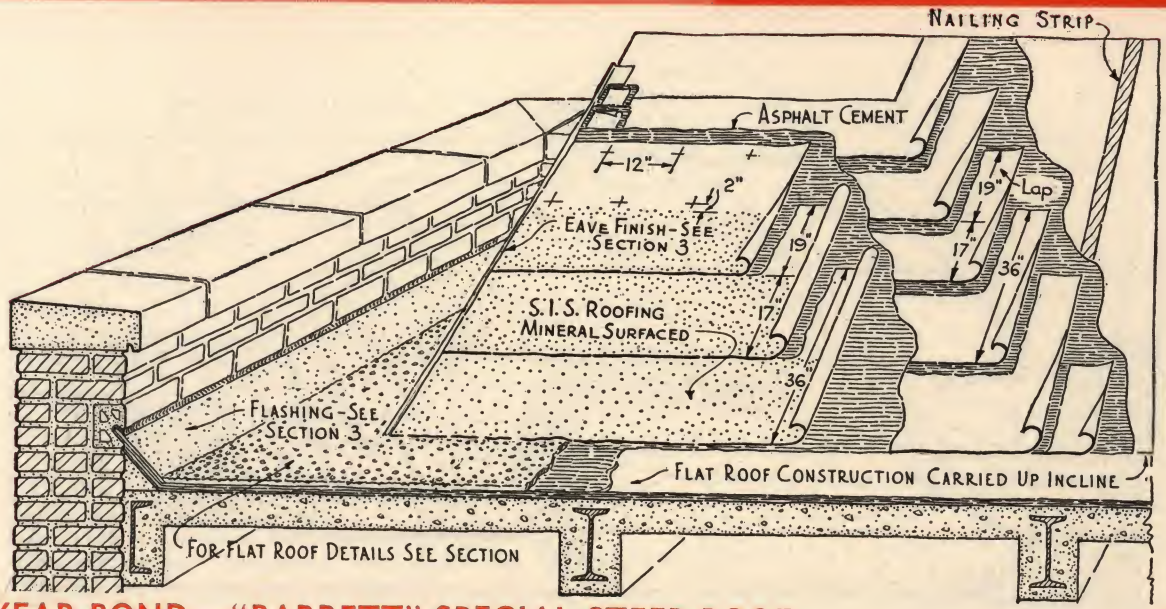
COMPLETE SPECIFICATIONS:

Same as for twenty (20) year bond except for following changes:

APPLICATION OF ROOFING—Second—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Felt at right angles to the incline of the roof, lapping each sheet twenty-four and two-thirds (24 2/3) inches over preceding one. Balance of paragraph remains the same.

Third—Mop back on each sheet the full distance of the twenty-four and two-thirds (24 2/3) inch lap with BARRETT Steep Roofing Pitch. (Balance of paragraph remains the same.)

GENERAL—Change "one hundred (100)" to "eighty (80)" pounds of Pitch. Change "period of twenty (20)" to "period of fifteen (15)" years.



15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. The concrete or gypsum shall permit of nailing, or creosoted wooden nailing strips shall be provided. If nailing strips are provided, they shall be laid parallel with the incline of the roof and shall be spaced not more than three (3) feet apart.

APPLICATION OF ROOFING—Note—The S. I. S. Roofing shall be cut in strips twelve (12) to eighteen (18) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

First—The surface of the roof deck shall be given a priming coat of Barrett CRYSTAL Asphalt Primer. The priming coat shall be allowed to dry for not less than six (6) hours before the application of the roofing.

Second—Coat the entire surface uniformly with Barrett ANCHOR Roofing Asphalt or S. I. S. Cement.

Note—On poured gypsum decks prime coat and first application of S.I.S. Cement or mopping of asphalt shall be strip mopped with continuous moppings two (2) feet wide with six (6) inch spacing between moppings.

Third—(For cold application—Barrett S. I. S. Cement)—Over the entire surface lay two (2) plies of BARRETT No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one, coating with S. I. S. Cement the full nineteen inch (19") lap on each sheet so that in no place shall felt touch felt. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs, spacing the nails not more than eighteen (18) inches apart.

Third—(For hot application—Barrett ANCHOR Roofing Asphalt)—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Felt or No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one, mopping with ANCHOR Roofing Asphalt the full nineteen inch (19") lap on each sheet so that in no place shall felt touch felt. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs, spacing the nails not more than eighteen (18) inches apart.

Fourth—Over the entire surface spread a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt, into which shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to incline of roof, lapping the sheets the full width of the nineteen (19) inch selvage. All sheets of S. I. S. Roofing shall be securely fastened in place with a double course of one (1) inch barbed roofing nails driven through flat tin discs, and placed along the selvage side of sheet. Nailing courses should be staggered and nails spaced not more than twelve (12) inches apart. Lower nailing course shall be held back two (2) inches from the mineral surfacing.

(At the option of Barrett's inspector, where inclines exceed 4 inches to the foot, S. I. S. Roofing may be laid vertically or approximately parallel with the slope of the roof.)

Fifth—Spread over the entire surface of the nineteen (19) inch selvage, a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt into which shall be immediately rolled the following sheet of S. I. S. Roofing.

Sixth—All end laps shall be over-lapped at least six (6) inches. The underlying selvage portion of each end lap shall be nailed along end of sheet with four (4) nails through flat tin discs spaced evenly. The six (6) inch laps shall be coated with Barrett ANCHOR Roofing Asphalt or S. I. S. Cement and the overlapping sheet pressed down.

GENERAL—Care shall be taken during application that felt and S. I. S. Roofing are laid without wrinkles or buckles. Not less than thirty (30) pounds of ANCHOR Asphalt or two (2) gallons of S. I. S. Cement per coating shall be used for every one hundred (100) square feet of completed roofing. Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of fifteen (15) years from date of completion.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) Where both flat and steep areas are involved on a single job, the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

10 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for ten (10) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

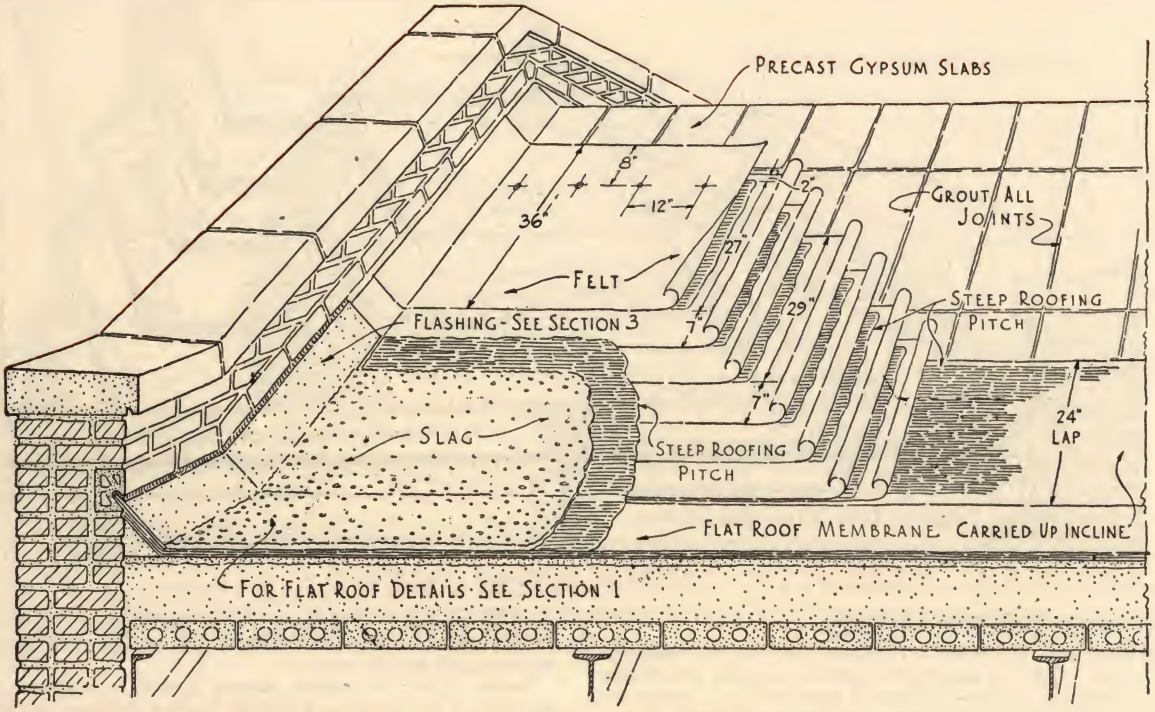
Same as for fifteen (15) year bond except for following changes:

APPLICATION OF ROOFING—Omit second and third paragraphs and replace with the following:

Second—Over the roof deck spread with a mop a uniform coating of Barrett ANCHOR Asphalt or S. I. S. Cement, into which, while hot, immediately embed one (1) ply of BARRETT No. 15 Asphalt Felt, laid at right angles to the incline of the roof, lapping each sheet six (6) inches over preceding one. The six (6) inch overlap shall be thoroughly cemented together with Barrett ANCHOR Asphalt or S. I. S. Cement. The Felt shall be nailed two (2) inches from the lower edge of each sheet, with barbed roofing nails through flat tin discs, spaced not more than eighteen (18) inches apart.

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

PRECAST CONCRETE, PRECAST GYPSUM SLABS or METAL BOUND GYPSUM PLANK
Inclines over 2″ and not exceeding 4″ to 1′-0″



20 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 5-PLY

For Precast Concrete Slab Decks, provision shall be made for Nailing Strips set parallel with incline of roof and spaced not more than three (3) feet apart.

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over precast concrete, precast gypsum slabs or metal bound gypsum plank over steep surfaces) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between precast gypsum or precast concrete slabs shall be fully grouted. The roof deck shall be smooth, firm, dry and free from loose material.

APPLICATION OF ROOFING—First—Over the entire surface lay five (5) plies of Barrett "SPECIFICATION" Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-nine (29) inches over preceding one. Each sheet shall be nailed with one and one-half (1½) inch barbed roofing nails, through flat tin discs, eight (8) inches from the upper edge, nails to be spaced not more than one (1) foot apart.

Second—Mop back on each sheet for a distance of twenty-seven (27) inches with BARRETT Steep Roofing Pitch. The Felt shall follow and shall be firmly embedded into the hot moppings as applied. Care shall be taken that pitch moppings are even with lower edge of each overlying sheet, and that the finished Felt surface shall be free of drippage.

Third—Over the entire surface apply a uniform coating of BARRETT Steep Roofing Pitch, into which, while hot, firmly embed not less than two hundred and seventy-five (275) pounds of slag for each one hundred (100) square feet of finished roofing. The slag shall be from three-sixteenths ($\frac{3}{16}$) to one-half (½) inch in size, shall be dry and free from dirt, and shall be embedded into the surface mopping immediately. If roofing is applied during cool weather, or slag is damp, slag shall be heated and dried, so that it is warm when applied to the roof. The slag surfacing shall be continuous, and shall cover and shall be firmly embedded into the surface coating.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than eighty (80) pounds of Pitch shall be used for constructing the membrane, and not less than sixty (60) pounds of Pitch shall be used for embedding the slag in constructing each one hundred (100) square feet of completed roof.

Note: BARRETT Steep Roof Pitch shall be heated in tubeless kettles, or kettles with tubes equipped with a thermostatic control unit.

The Pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces, not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, see Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) That the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification for use over precast concrete, precast gypsum or metal bound gypsum plank over steep surfaces, by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from the date of completion, in accordance with Note No. 1 of said specification.

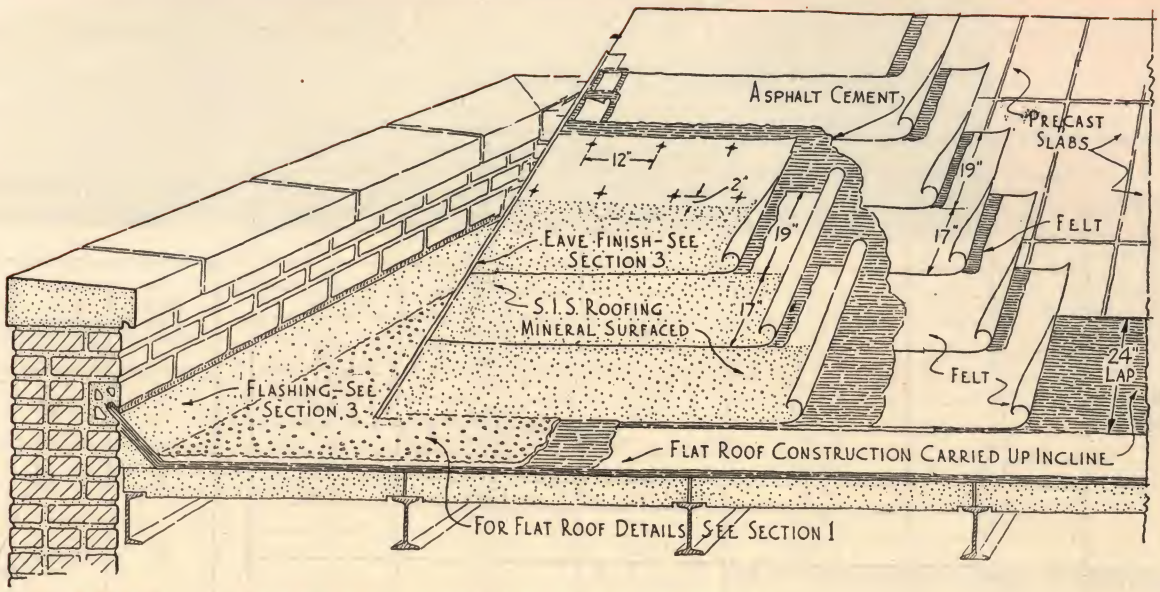
COMPLETE SPECIFICATIONS:

Same as for twenty (20) year bond except for the following changes:

APPLICATION OF ROOFING—First—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Felt at right angles to the incline of the roof lapping each sheet twenty-seven and one-half (27½) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin discs, nine and one-half (9½) inches from the upper edge and nails shall be spaced not more than one (1) foot apart.

Second—Mop back on each sheet for a distance of twenty-five and one-half (25½) inches with BARRETT Steep Roofing Pitch. (Balance of paragraph remains the same.)

GENERAL—Change "eighty (80)" to "sixty (60)" pounds of Pitch. Change "period of twenty (20)" to "period of fifteen (15)" years.



15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

For Precast Concrete Slab Decks, provision shall be made for Nailing Strips set parallel with incline of roof and spaced not more than three (3) feet apart.

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over precast concrete, precast gypsum slabs or metal bound gypsum plank), by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between precast gypsum or precast concrete slabs shall be properly grouted. The roof deck shall be smooth, firm, dry and free from loose material. The gypsum or concrete slabs shall permit of nailing or creosoted wooden nailing strips shall be provided. If nailing strips are provided, they shall be parallel with the incline of the roof and spaced not more than three (3) feet apart.

APPLICATION OF ROOFING—Note—The S. I. S. Roofing shall be cut in strips twelve (12) to eighteen (18) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

First—(For cold application—Barrett S. I. S. Cement)—Over the entire surface lay two (2) plies of BARRETT No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

First—(For hot application—Barrett ANCHOR Roofing Asphalt)—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Felt or No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

Second—Coat back on each sheet for a distance of seventeen (17) inches with Barrett S. I. S. Cement or ANCHOR Roofing Asphalt. The Felt shall be firmly embedded into the coating as applied. The coatings should be even with lower edge of each overlying sheet, and the finished Felt surface free from drippage.

Third—Over the entire surface spread a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt, into which shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to the incline of the roof, lapping the sheets the full width of the nineteen (19) inch selvage. All sheets of Barrett S. I. S. Roofing shall be securely fastened in place with a double course of one and one-half (1½) inch barbed roofing nails driven through flat tin discs, and placed along the selvage side of the sheet. Nailing courses should be staggered and nails spaced not more than twelve (12) inches apart. The lower nailing course shall be held back two (2) inches from the mineral surfacing.

(At the option of Barrett's inspector, where inclines exceed 4 inches to the foot, S. I. S. Roofing may be laid vertically or approximately parallel with the slope of the roof.)

Fourth—Spread over the entire surface of the nineteen (19) inch selvage a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt into which shall be immediately rolled the following sheet of Barrett S. I. S. Roofing.

Fifth—All end laps shall be over-lapped at least six (6) inches. The underlying selvage portion of each end lap shall be nailed with four (4) nails through flat tin discs spaced four (4) inches apart starting one (1) inch from the lower edge of selvage. The six (6) inch lap shall be coated with Barrett ANCHOR Roofing Asphalt or S. I. S. cement and the over-lapping sheet thoroughly pressed down.

GENERAL—Care shall be taken during application that felt and S. I. S. Roofing are laid without wrinkles or buckles. Not less than thirty (30) pounds of ANCHOR Asphalt or two (2) gallons of S. I. S. Cement per coating shall be used for each one hundred (100) square feet of completed roofing.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of fifteen (15) years from date of completion.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) Where both flat and steep areas are involved in a single job, the steep area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof shall be covered with a Barrett Bonded Roof.

10 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for ten (10) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Same as for fifteen (15) year bond except for the following changes:

APPLICATION OF ROOFING—Omit first and second paragraphs and substitute the following: "Over the entire surface lay one (1) ply of BARRETT No. 30 Asphalt Felt as a base sheet lapping each sheet four (4) inches over preceding one and nailing along lapped edge with barbed roofing nails through flat tin discs spacing the nails not more than eighteen (18) inches apart."

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

ROOF CONSTRUCTION AND DRAINAGE DATA—Flat Roofs, Steep Roofs NAILING REQUIREMENTS

RISE OR INCLINE OF ROOFS PER FOOT; INCREASED AREA PER SQUARE FOOT OF STEEP ROOFS OVER FLAT ROOFS

Classification	Incline			Inclined Area Per Square Foot Horizontal Area	Percentage Increase In Area Over Flat Roof
	Inch Per Foot Horizontal	Angle With Horizontal	Fractional Factor		
Flat Roofs	⅛	0°-36′		1.000	0.0
	¼	1°-12′		1.000	0.0
	⅜	1°-47′		1.000	0.0
	½	2°-23′	1/48	1.001	0.1
	⅝	2°-59′		1.001	0.1
	¾	3°-35′	1/32	1.002	0.2
	1	4°-46′	1/24	1.003	0.3
	1⅛	5°-21′		1.004	0.4
	1¼	5°-57′		1.005	0.5
	1½	7°-8′	1/16	1.008	0.8
	1¾	8°-18′		1.011	1.1
	2	9°-28′	1/12	1.014	1.4
Steep Roofs	2¼	10°-37′		1.017	1.7
	2½	11°-46′		1.021	2.1
	2¾	12°-54′		1.026	2.6
	3	14°-2′	1/8	1.031	3.1
	3¼	15°-9′		1.036	3.6
	3½	16°-16′		1.042	4.2
	3¾	17°-21′		1.048	4.8
	4	18°-26′	1/6	1.054	5.4
	4¼	19°-30′		1.061	6.1
	4½	20°-34′		1.068	6.8
	5	22°-37′		1.083	8.3
	6	26°-34′	1/4	1.118	11.6
	7	30°-16′		1.158	15.8
	8	33°-42′	1/3	1.202	20.2
	9	36°-52′		1.250	25.0
	10	39°-48′		1.302	30.2
	11	42°-31′		1.356	35.6
	12	45°-0′	1/2	1.414	41.4
Extra Steep Roofs	14	49°-24′		1.537	53.7
	16	53°-8′		1.667	66.7
	18	56°-19′		1.803	80.3
	20	59°-2′		1.943	94.3
	22	61°-23′		2.088	108.8
	24	63°-26′	1	2.235	123.5

DRAINAGE DATA LEADER PIPE CAPACITIES

ROOF AREA DRAINED BY ONE LEADER PIPE

Pipe Size (Ins.)	Pipe Area (Sq. Ins.)	Roof Area Drained (Sq. Ft.)
3	7.06	1,060
4	12.56	1,885
5	19.63	2,945
6	28.27	4,240
8	50.26	7,540

Table based on 150 square feet of roof surface drained per square inch of Leader Pipe area and on a maximum estimated rainfall intensity of 8 inches per hour. 150 square feet per square inch of Leader Pipe area is an average value for the United States and Canada; for localities of unusually high or low rainfall intensities, last column in table should be modified.

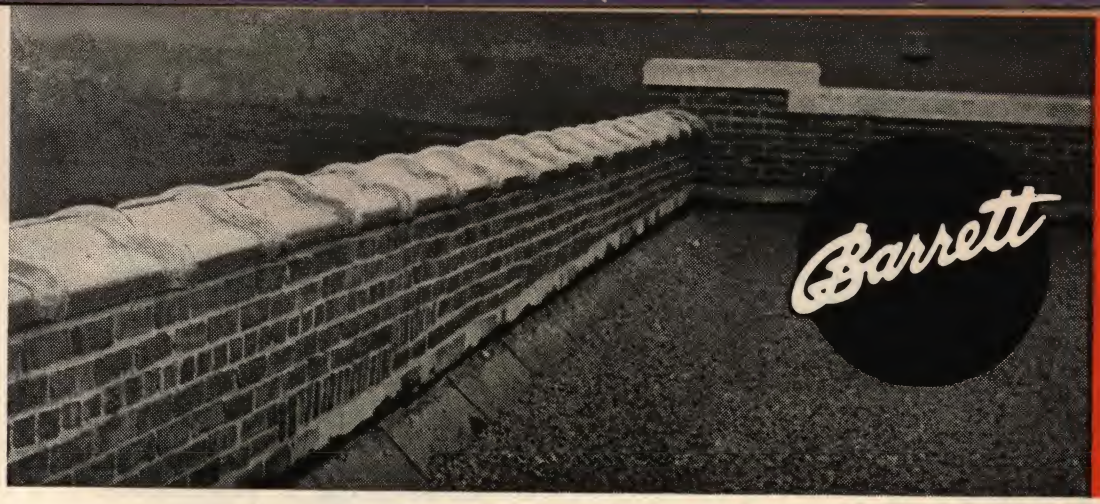
NAILING REQUIREMENTS

Nailing should preferably be done with seven-eighths (⅞) inch or one (1) inch roofing nails driven through flat tin discs one (1) inch or more in diameter. Standard large-headed roofing nails, the same as are generally packed with prepared roofing, may be used if flat tin discs and ordinary roofing nails are not available, but the latter are desirable.

In the application of felts, nails are to be spaced approximately 2″ from the upper edge of each sheet, and each ply of felt nailed as follows, unless weather conditions require more frequent nailing:

Incline	Nail Spacing
Up to ½″ per ft.	Not more than 10′ apart
Up to 1″ per ft.	Not more than 8′ apart
Up to 1½″ per ft.	Not more than 5′ apart
Up to 2″ per ft.	Not more than 3′ apart
Up to 4″ per ft.	Not more than 2′ apart
Over 4″ per ft.	Not more than 1′ apart

For wood decks on such structures as freight houses, warehouses, ice houses or roundhouses, where under side of the roof deck is not to be sheathed or plastered and is subjected to wind pressure due to windows or doors which may be open during high winds, and on all parts of roof decks extending out beyond the bearing walls, the first two plies of felt shall be nailed every 2′ along the lower edge of each sheet, and the remaining plies shall be nailed every 2′, not more than 6″ from the upper edge of each sheet.



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THE MOST VULNERABLE PART IN ANY ROOF

Purpose

The prevention of seepage or leaks at masonry walls of the modern building is a serious problem confronting every architect, engineer and builder.

These troubles are frequently traced to faulty flashing construction. Low spots where snow, ice, and rain water concentrate, are usually found along parapet walls, curbs, or other places where flashings are installed. Inadequate or faulty construction at these vital points opens the way to troublesome leaks and costly repairs.

Barrett Bonded Flashings

The Barrett system of flashing is considered a component part of the roof construction. The waterproof membrane is definitely tied in with the parapet wall by means of the flashing block. This part of the roof is reinforced, the added protection actually making it the strongest part of the roof. The flashing is flexible, and permits of movement occasioned by settlement of the deck, or by expansion and contraction in materials.

Eliminates Divided Responsibility

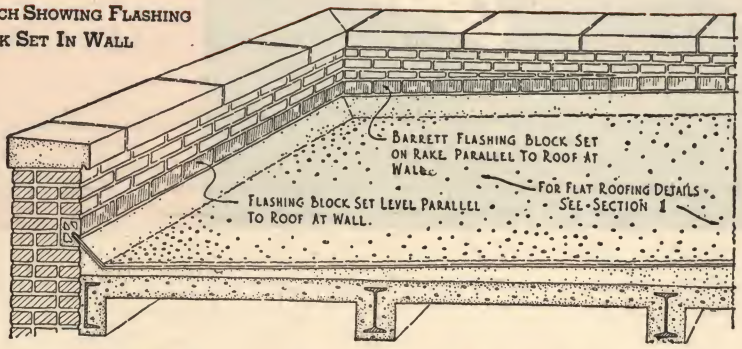
The Barrett system, used in conjunction with Barrett "SPECIFICATION" Roofs, definitely eliminates troublesome flashing leaks at parapets, curbs, chimneys, fire-walls, etc. The responsibility for the complete roof, including flashing construction, rests with the Barrett approved roofer. The flashing is installed by the roofing contractor at the same time he applies the roofing, and its performance is fully covered in the guaranty bond.

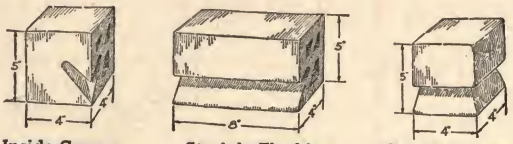
A Good Roof Deserves Good Flashings

Good flashings promote the serviceability of good roofs. The Barrett flashing system, developed after years of practical experience, is a worthy companion to Barrett "SPECIFICATION" Roofs. Time-tried under every conceivable condition, it is accepted generally as a standard type of construction for both flat and steep built-up roofs.

FLASHING BLOCK IN BRICK WALLS

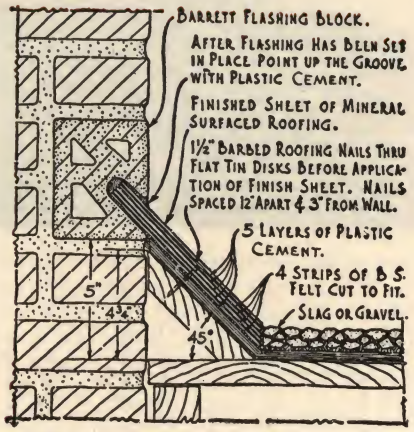
Sketch Showing Flashing Block Set In Wall





Inside Corner | Straight Flashing Block | Outside Corner

Styles of Blocks



Flashing Block Type for Brick Walls

20 YEAR BOND—BARRETT FLASHING FOR BRICK WALLS, TYPE "AA" —— 5-PLY

Note—This flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

APPLICATION OF FLASHING—First—Before applying flashing material, the flashing groove shall be thoroughly cleaned of mortar or other foreign materials.

Second—The Felt and Pitch roofing shall be extended up the face of the cant to the wall line and cut off evenly at that point. The plies of Felt shall be solidly cemented together with Pitch and be free from wrinkles or buckles.

Third—Over the roofing, covering the cant, and up into the full depth of the flashing groove, apply a heavy uniform layer of Barrett Plastic ELASTIGUM Cement into which embed one (1) ply of flashing strip, cut the proper width from a roll of Barrett "SPECIFICATION" Felt. The sheets of the flashing strips shall be lapped one (1) inch and the strips shall extend into the full depth of the flashing groove. This operation shall be repeated until four (4) layers of Plastic ELASTIGUM Cement and four (4) plies of flashing strip have been applied. The fourth flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.

Fourth—Over the entire surface of the flashing strips thus laid, apply a uniform trowelled coating of Plastic ELASTIGUM Cement. Care shall be taken so that a liberal amount of cement is placed along the opening of the flashing groove. Into the Plastic ELASTIGUM Cement embed immediately a layer of Barrett EVER-LASTIC Mineral Surfaced Roofing of the proper width, extending into the full depth of the groove and down to the roofing. The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Plastic ELASTIGUM Cement and shall be over-lapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down. The flashing groove shall then be pointed up with Plastic ELASTIGUM Cement.

Note No. 1—IMPORTANT—No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck.

Note No. 2—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

SPECIFICATION FOR INSTALLATION WITH VARIOUS TYPES OF ROOF DECKS

Where insulation is used and terminates at cant, cant shall be so constructed that it will provide for a vertical offset equal in thickness to the insulation, and the base of the block shall be set five (5) inches above the surface of the insulation.

FOR MASONRY—Barrett Flashing Block shall be built into walls with the base of the block set five (5) inches above and parallel with the finished grade line of the roof at wall.

Blocks shall be laid in true alignment, set in Portland Cement Mortar, and joints shall be properly pointed. All end joints shall be solid mortar joints.

The flashing groove of the blocks shall be thoroughly cleaned of all surplus mortar.

Note—Special blocks are manufactured for use at right angle external and internal wall corners.

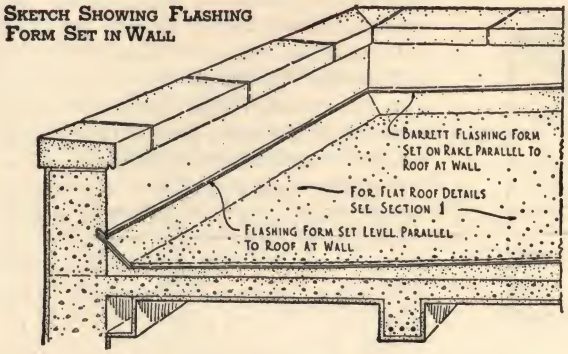
FOR CONCRETE OR GYPSUM ROOF DECK—At angle of roof deck and the walls in which flashing block has been installed, provide a concrete cant **that will permit of nailing,** the upper edge of which shall terminate one-quarter (¼) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees the same as the flashing groove in the block. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) inches.

FOR CARPENTRY, BOARD ROOF DECK—At angle of roof deck and the walls in which flashing block has been installed, provide a wood cant at least one (1) inch thick, the upper edge of which shall terminate one-quarter (¼) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees, the same as the flashing groove in the block. The cant shall be securely fastened to the roof deck. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) inches.

15 YEAR BOND—BARRETT FLASHING FOR BRICK WALLS, TYPE "A"——4-PLY

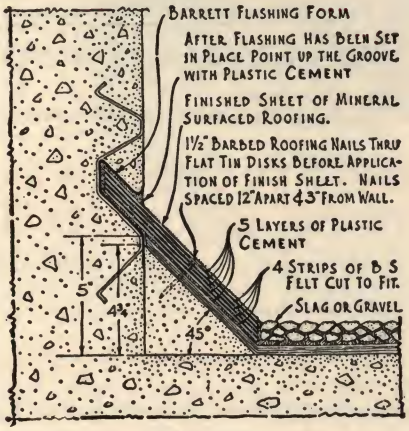
Same as above, except change the last half of paragraph headed "Third" as follows:

This operation shall be repeated until three (3) layers of Plastic ELASTIGUM Cement and three (3) plies of flashing strips have been applied. The third flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.



Sketch Showing Flashing Form Set in Wall

Styles of Forms



Flashing Form Type for Concrete Walls

20 YEAR BOND—BARRETT FLASHING FOR CONCRETE WALLS, TYPE "AA" —— 5-PLY

Note—This flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

APPLICATION OF FLASHING—First—Before applying flashing material, the flashing groove shall be thoroughly cleaned of mortar or other foreign materials.

Second—The Felt and Pitch roofing shall be extended up the face of the cant to the wall line and cut off evenly at that point. The plies of Felt shall be solidly cemented together with Pitch and be free from wrinkles or buckles.

Third—Over the roofing, covering the cant, and up into the full depth of the flashing groove, apply a heavy uniform layer of Barrett Plastic ELASTIGUM Cement into which embed one (1) ply of flashing strip, cut the proper width from a roll of Barrett "SPECIFICATION" Felt. The sheets of the flashing strips shall be lapped one (1) inch and the strips shall extend into the full depth of the flashing groove. This operation shall be repeated until four (4) layers of Plastic ELASTIGUM Cement and four (4) plies of flashing strips have been applied. The fourth flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.

Fourth—Over the entire surface of the flashing strips thus laid, apply a uniform trowelled coating of Plastic ELASTIGUM Cement. Care shall be taken so that a liberal amount of cement is placed along the opening of the flashing groove. Into the Plastic ELASTIGUM Cement embed immediately a layer of Barrett EVER-LASTIC Mineral Surfaced Roofing of the proper width, extending into the full depth of the groove and down to the roofing. The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Plastic ELASTIGUM Cement and shall be over-lapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down. The flashing groove shall then be pointed up with Plastic ELASTIGUM Cement.

Note No. 1—IMPORTANT—No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck.

Note No. 2—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

SPECIFICATION FOR INSTALLATION WITH CONCRETE ROOF DECKS

FOR CONCRETE—Barrett Flashing Form shall be attached to the inside of the wall form by means of metal strap brackets (so provided) spaced not more than two (2) feet apart and secured by one (1) inch smooth wire nails.

Barrett Flashing Form shall be set so that the lower edge of the flashing groove is five (5) inches above and parallel with the finished grade line of the roof at wall.

Where insulation is used, the base of the form shall be set five (5) inches above the surface of the insulation.

Note—Special mitred flashing forms are manufactured for use at right angle external and internal wall corners.

At angle of roof deck and the wall in which flashing form has been installed, provide a concrete cant **that will permit of nailing,** the upper edge of which shall terminate one-quarter (¼) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees the same as the flashing groove in the block. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) inches.

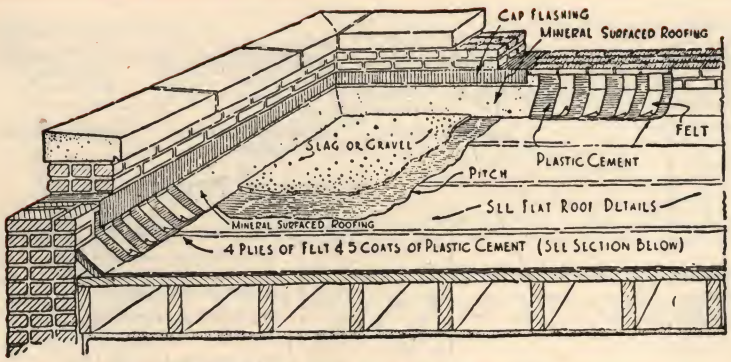
Where insulation is used and terminates at cant, cant shall be so constructed, that it will provide for a vertical offset equal in thickness to the insulation.

15 YEAR BOND—BARRETT FLASHING FOR CONCRETE WALLS, TYPE "A"—4-PLY

Same as above, except change the last half of paragraph headed "Third" as follows:

This operation shall be repeated until three (3) layers of Plastic ELASTIGUM Cement and three (3) plies of flashing strip have been applied. The third flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.

ALTERNATE TYPE "AA" AND TYPE "A" FLASHINGS
Bituminous Base and Metal Counter-Flashing Construction



BARRETT BITUMINOUS BASE FLASHINGS WITH METAL COUNTER-FLASHING

SPECIFICATIONS

Note—Flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

BASE FLASHING

TYPE "AA"—The felt and pitch roofing shall be extended up the face of a cant, placed five (5) inches above roof line and extending to the roof deck on an angle of 45°, up to the wall line and cut off evenly at that point. The membrane shall be laid evenly and without wrinkles or buckles.

Over the roofing membrane covering the cant, apply a heavy uniform layer of Barrett Plastic ELASTIGUM Cement into which embed one (1) ply of flashing strips cut the proper width from a roll of Barrett "SPECIFICATION" Felt. The sheets of the flashing strips shall be lapped one (1) inch and the strips shall extend on to the vertical wall for a distance of one (1) inch above the top of the cant.

This operation shall be repeated until four (4) layers of Plastic ELASTIGUM Cement and four (4) plies of flashing strips have been applied, each flashing strip stepped above the preceding strip, and on the wall, so that the last strip is immediately below where the metal counter-flashing enters the wall. Each flashing strip shall be set in separately and shall break joints with the underlying strip. The strips shall then be nailed to the cant, using one and one-half (1½) inch barbed roofing nails through flat tin discs spaced twelve (12) inches on center.

Over the entire surface of the flashing strips thus laid, apply a uniform trowel coat of Plastic ELASTIGUM Cement into which immediately embed a layer of Barrett EVERLASTIC Mineral Surfaced Roofing of the proper width, extending from the base of the cant to immediately below where the metal counter-flashing enters the wall. The Mineral Surfaced Roofing shall be set in place firmly so that there are no buckles or loose sections. The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Plastic ELASTIGUM Cement and shall be overlapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down.

The base flashing shall then be nailed on eight (8) inch to twelve (12) inch centers at a point approximately two (2) inches below where the metal counter-flashing enters the wall, or in the mortar joints immediately below the joint into which the counter-flashing is set.

TYPE "A"—Same as Type "AA" above, except change third paragraph as follows:

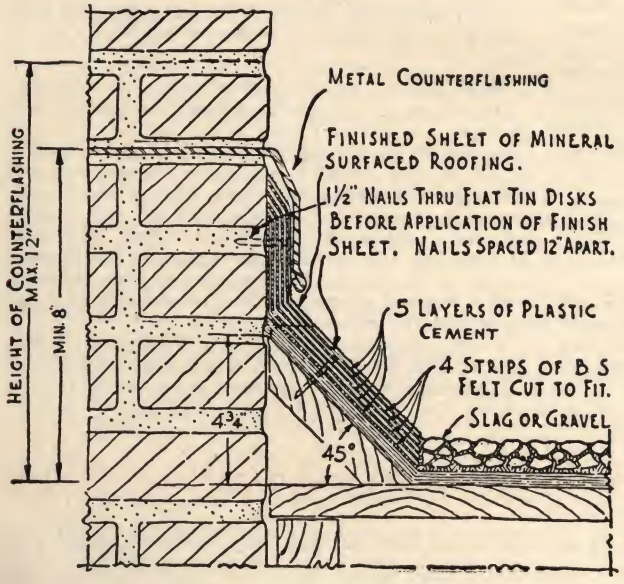
This operation shall be repeated until three (3) layers of Plastic ELASTIGUM Cement and three (3) plies of flashing strips have been applied, each flashing strip stepped above the preceding strip, and on the wall, so that the last strip is immediately below where the metal counter-flashing enters the wall. Each flashing strip shall be set in separately and shall break joints with the underlying strip. The strips shall then be nailed to the cant, using one and one-half (1½) inch barbed roofing nails through flat tin discs spaced twelve (12) inches on center.

METAL COUNTER-FLASHING

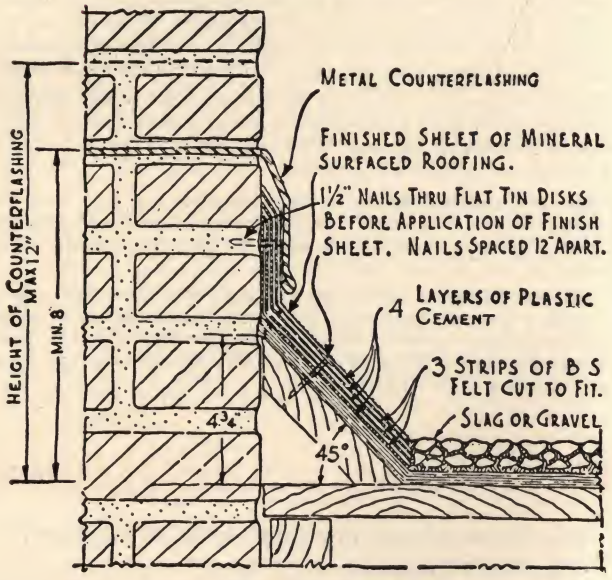
The metal counter-flashing shall overlap the bituminous base flashing to the junction of wall and cant surface, so that all flashing strips and nails are completely counter-flashed with the metal cap.

General—No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck, and shall be properly flashed.

Note—When at Barrett's option guaranty bonds are issued on these types of construction, such bonds will cover the bituminous base flashing only, exclusive of all metal work or any through wall counter-flashing.

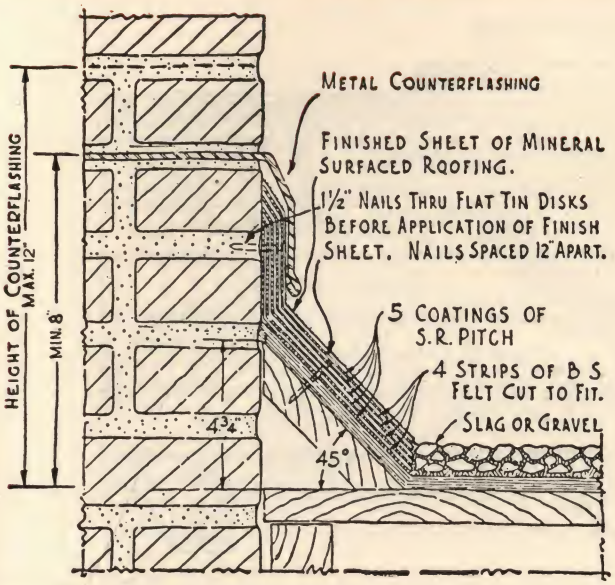


ALTERNATE TYPE "AA" FLASHING

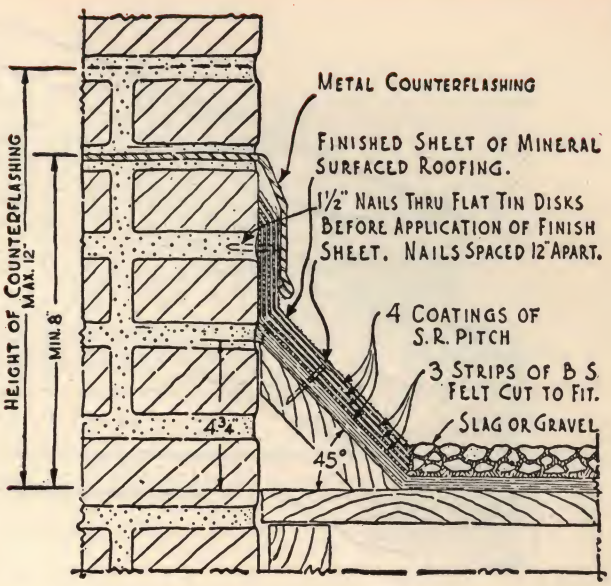


ALTERNATE TYPE "A" FLASHING

For hot application flashing, Steep Roof Pitch may be substituted for Plastic ELASTIGUM Cement as specified above.



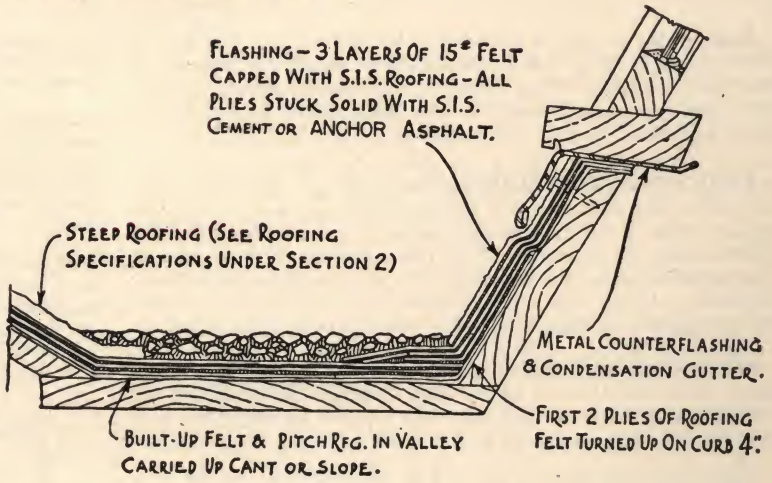
ALTERNATE TYPE BITUMINOUS BASE FLASHING
(FOR TYPE "AA" ROOFS.)

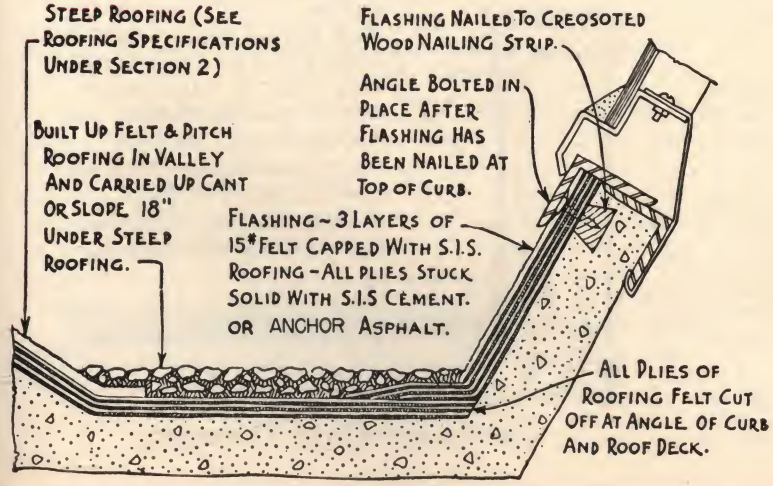


ALTERNATE TYPE BITUMINOUS BASE FLASHING
(FOR TYPE "A" ROOFS.)

FOR SPECIFICATION FORM SEE PAGE 32.

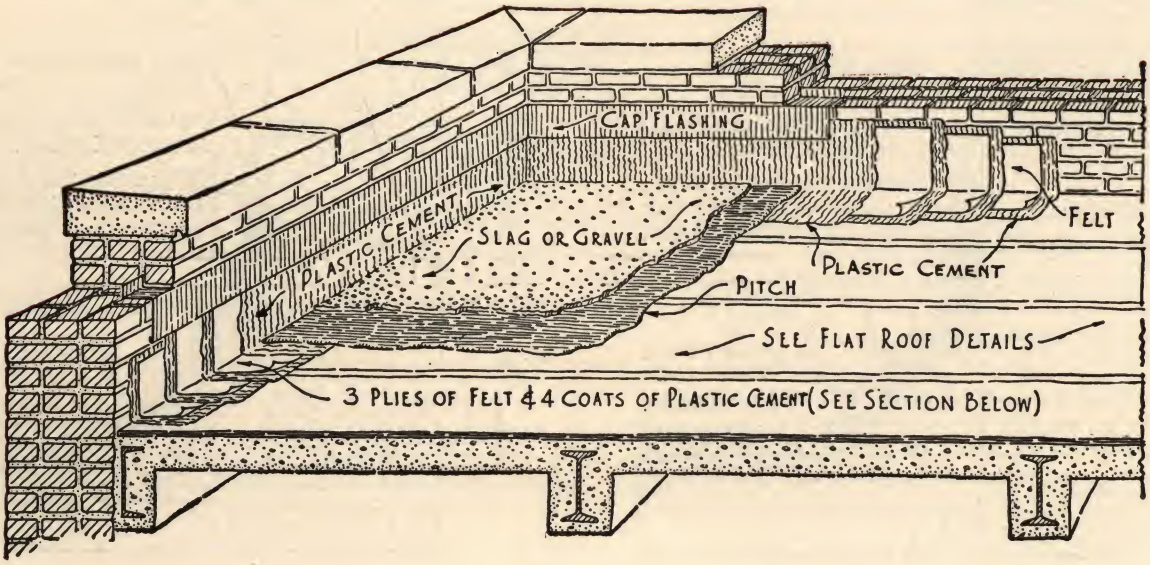
RIGHT—S. I. S. ROOFING FOR FLASHING CONSTRUCTION OVER WOOD CURB OR CANT





LEFT—S. I. S. ROOFING FOR FLASHING CONSTRUCTION OVER CONCRETE CURB OR CANT

BITUMINOUS BASE FLASHINGS
For Brick or Concrete Walls



10 YEAR—BARRETT BITUMINOUS FLASHING FOR BRICK OR CONCRETE WALLS — 3-PLY

Note—If the roofing is laid over a board deck, the first two (2) plies of Felt shall be turned up against perpendicular surfaces at least four (4) inches. If the roofing is laid over a concrete deck, all plies shall be cut off evenly at the angle of the roof deck and parapet walls.

APPLICATION OF FLASHING—First—After all plies of roofing have been laid and preceding the application of the slag or gravel surface, apply a uniform trowelled coating of Barrett Plastic ELASTIGUM Cement for a distance of ten (10) inches up the parapet wall and six (6) inches out on the roofing into which shall be immediately embedded a ten (10) inch strip of BARRETT No. 15 Asphalt Felt extending up the wall six (6) inches and out on the roofing four (4) inches.

Second—This strip shall be coated with Plastic ELASTIGUM Cement. Then follow with a second strip of BARRETT No. 15 Asphalt Felt thirteen (13) inches wide extending eight (8) inches up the wall and five (5) inches out on the roof.

Third—This strip shall be coated with Plastic ELASTIGUM Cement into which embed a third strip of BARRETT No. 15 Asphalt Felt sixteen (16) inches wide, extending ten (10) inches up the wall and six (6) inches out on the roof.

Fourth—This strip shall be coated uniformly with Plastic ELASTIGUM Cement. Care shall be taken so that the top edge of the felt strips shall be pressed firmly against the masonry wall and the Plastic Cement feathered against it.

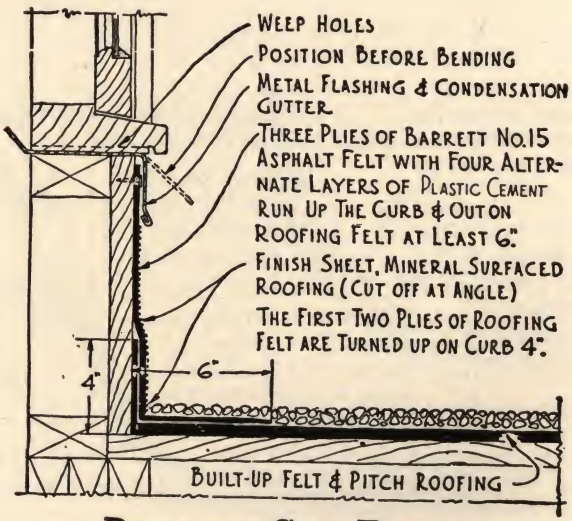
Felt strips shall not exceed ten (10) feet in length and shall be lapped at least one (1) inch and all joints broken so that each is covered by at least two (2) thicknesses of felt.

Where a cant is used, the width of the first sheet of felt installed shall be such that at least four (4) inches shall extend above top of the cant. Each succeeding strip shall follow the proportions, as specified above.

Note No. 1—Barrett will give its ten (10) year guaranty on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

Architect's Note—When Barrett's guarantee is issued on this type of construction, such guarantee will cover the bituminous base flashing only, exclusive of all metal work or any through wall counter-flashing. **The use of a metal counter-flashing with this type of installation is optional with Architect and if desired should be covered in specifications.**

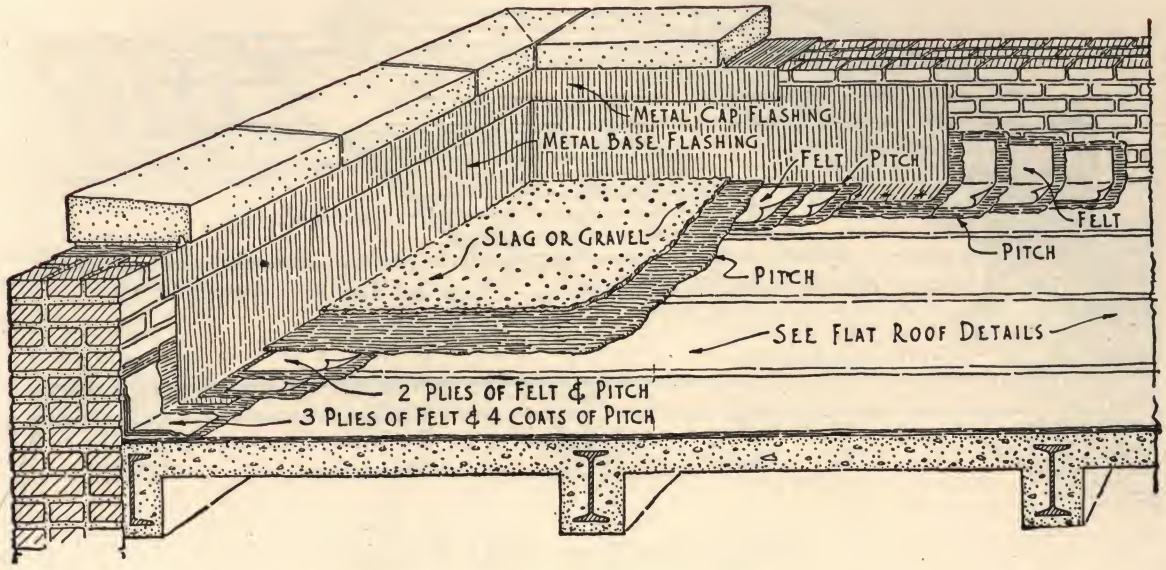
Where metal counter flashing is provided with this type of installation, and where specified, cap sheet of Barrett EVERLASTIC Mineral Surfaced Roofing may be applied after Plastic Cement flashing has been installed in place. Cap sheet shall be cut off at roof line. End laps shall be at least two (2) inches, with under lap well fastened and coated with Plastic ELASTIGUM Cement.



DETAIL FOR CURB FLASHING

METAL CAP AND BASE FLASHING
For Masonry Walls

8a/2



SPECIFICATIONS FOR FLASHINGS

Note—Architect or engineer shall specify and describe kind of metal to be used for flashing.

Metal flashings shall be installed at all parapet walls, curbs, pent houses and other vertical surfaces as shown on plans.

CAP FLASHINGS—(1)—All cap flashings shall be set into brick walls for a distance of four (4) inches and turned up one (1) inch behind the first course of brick and down the face of the wall overlapping the base flashing at least two (2) inches. End laps shall be at least two (2) inches and soldered.

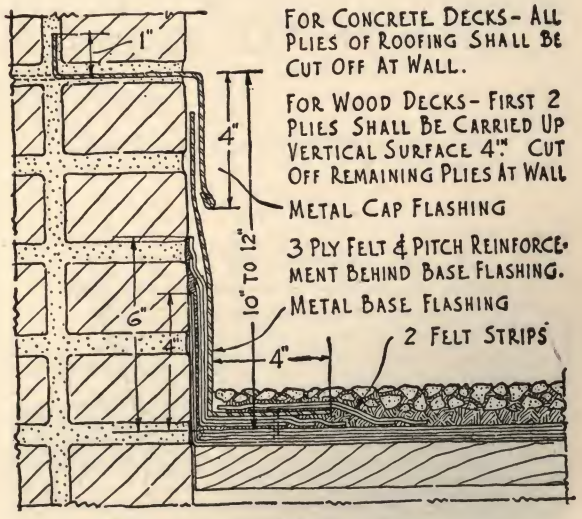
(2) Alternate Specification—Architect's Note—All cap flashings shall be set into brick walls and shall extend from inside face of wall to within one (1) inch of outside face, and down inside face of wall overlapping the base flashing at least two (2) inches. End laps shall be at least two (2) inches and soldered.

FELT AND PITCH REINFORCEMENT—After all plies of roofing have been laid, the roofing contractor shall set in separately, at the angle of the roof deck and vertical surface, three (3) plies of tarred felt cemented together with coal tar pitch. These plies shall extend out on the roofing at least four (4) inches and up the vertical surface six (6) inches. The last ply shall be coated with coal tar pitch. For roofing guaranteed for fifteen (15) years or less, a felt and pitch reinforcement of two (2) plies is sufficient.

BASE FLASHINGS—First—Over the felt and pitch reinforcement thus applied, the metal base flashing shall be set, extending out on the roof four (4) inches and up the vertical surface not less than ten (10) inches, nor more than twelve (12) inches. The base flashing shall be nailed to the roof deck with barbed roofing nails spaced not more than three (3) inches on centers on a line not exceeding three-quarters (¾) of an inch from the outer edge of the metal. **If concrete roof deck does not permit of nailing, a creosoted wood nailing strip at least one (1) inch thick, with two (2) inch face and three (3) inch base, shall be installed, centered on a line three (3) inches from the vertical surface.**

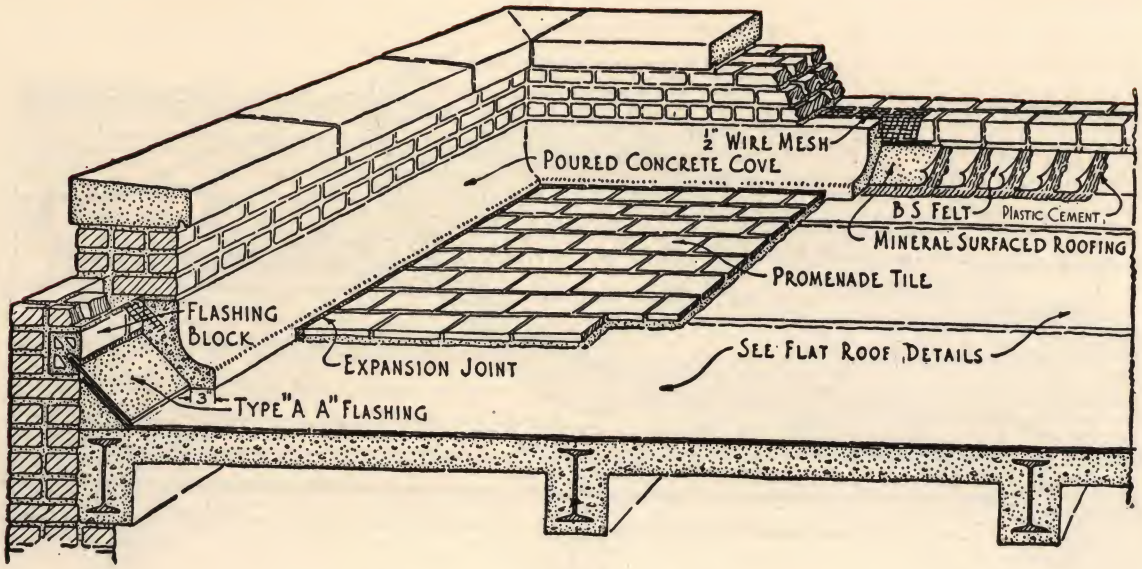
Second—End laps shall be locked and soldered unless otherwise specified.

Third—The four (4) inches of metal on the roof shall be given a prime coat of Barrett EVERJET Paint. It shall then be coated with Coal Tar Pitch into which shall be immediately embedded a strip of tarred felt four (4) inches wide centered over the nailing course. The first strip shall be coated with Coal Tar Pitch into which shall be immediately embedded a second strip of tarred felt six (6) inches wide completely covering the first.

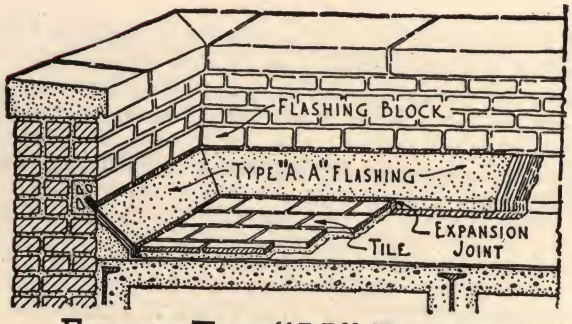


DETAIL FOR METAL CAP AND BASE FLASHING

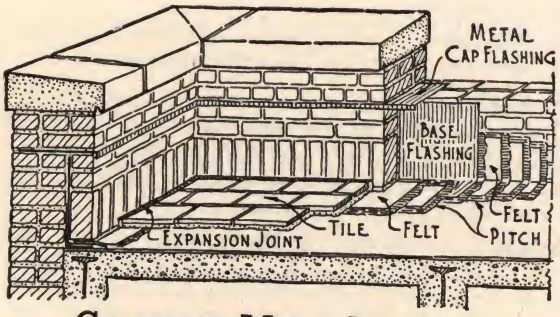
FLASHING AND EXPANSION JOINT DETAILS FOR PROMENADE TILE ROOFS



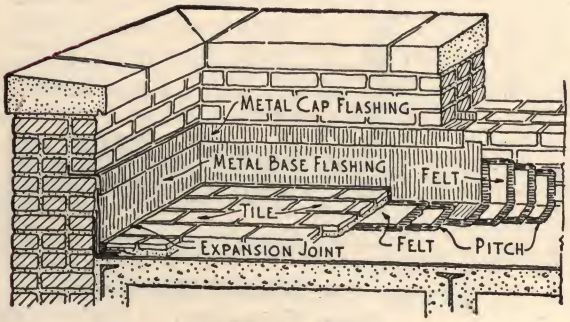
CONCEALED TYPE "AA" FLASHING



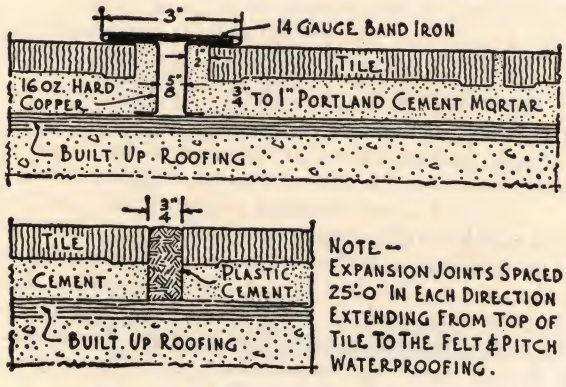
EXPOSED TYPE "AA" FLASHING



CONCEALED METAL FLASHING



EXPOSED METAL FLASHING



NOTE — EXPANSION JOINTS SPACED 25'-0" IN EACH DIRECTION EXTENDING FROM TOP OF TILE TO THE FELT & PITCH WATERPROOFING.

TYPES OF EXPANSION JOINTS

SPECIFICATIONS FOR SPANDREL BEAMS, PARAPET WALLS, ETC.

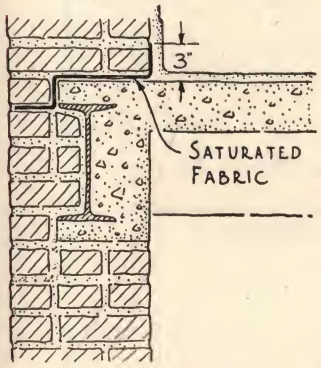
8a/2

At all spandrels, as detailed, provide and install waterproofing course consisting of two (2) plies of BARRETT Pitch Saturated Waterproofing Fabric, and three (3) full trowel coatings of BARRETT Plastic P B Cement, applied alternately. Waterproofing course shall be continuous, shall extend to within one-half (½) inch of outside edge of wall, and shall be turned up and cemented to inside walls to a height of at least three (3) inches. All end laps shall be not less than three (3) inches, and each succeeding layer shall break joints with underlying layer.

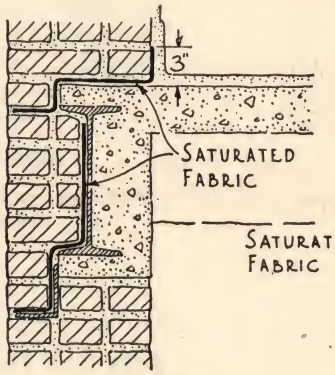
The fabric shall be applied without wrinkles or buckles and all trowel coatings shall be smooth and full. Care shall be taken not to injure the waterproofing course either during application or after completion.

Note No. 1 —All surfaces on which the waterproofing course is to be installed shall be smooth, dry and free from loose materials.

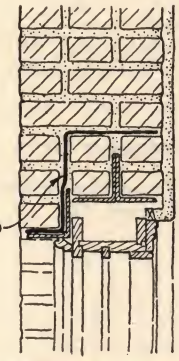
Note No. 2 —Method to be followed (whether counter or base and counter) shall be clearly indicated on plans and in specifications prepared by architect.



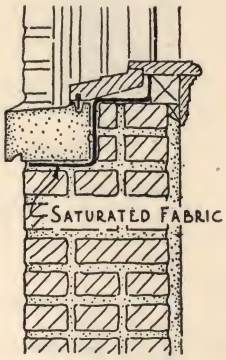
SPANDREL FLASHING COUNTER TYPE



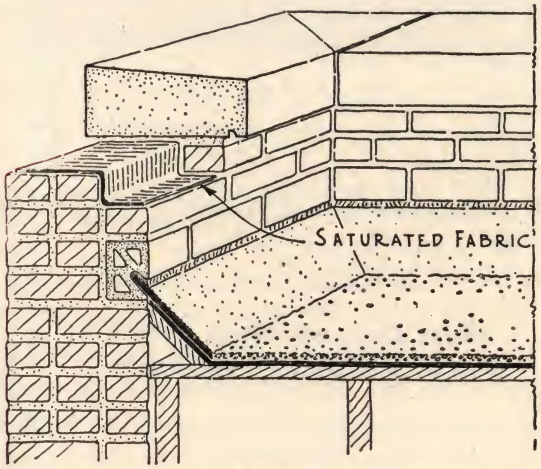
SPANDREL FLASHING BASE & COUNTER TYPE



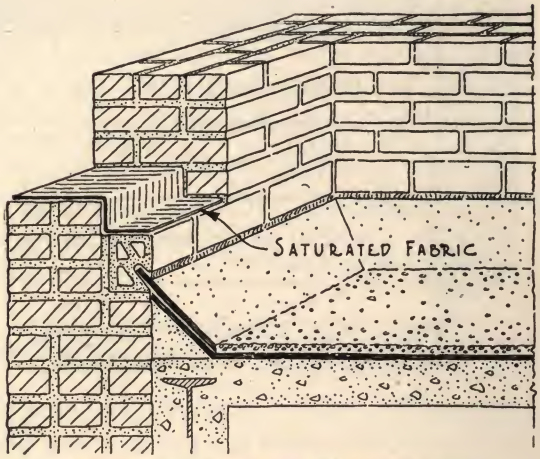
WINDOW HEAD FLASHING



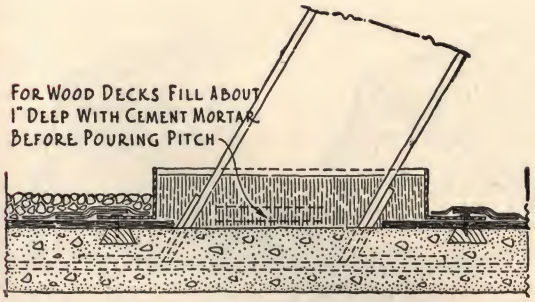
WINDOW SILL FLASHING



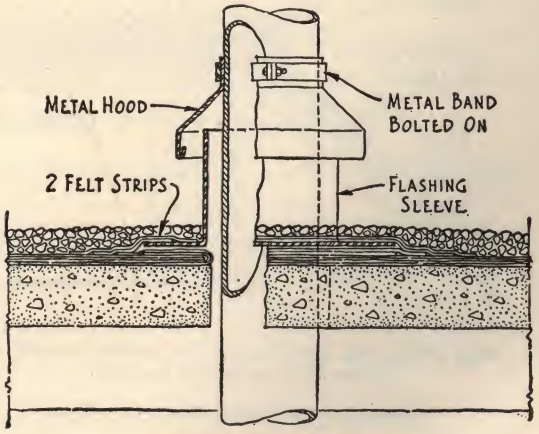
THRU WALL FLASHING LOW PARAPET



THRU WALL FLASHING HIGH PARAPET

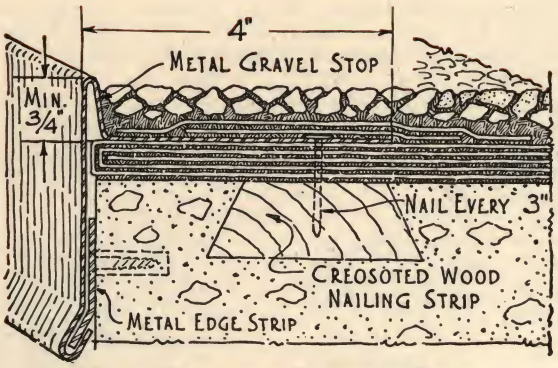


PITCH POCKETS FOR SIGN SUPPORTS, ETC.



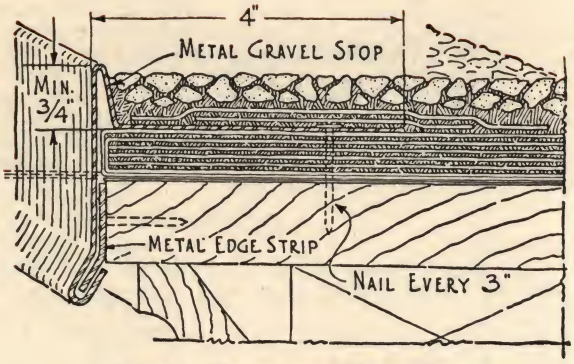
FLASHING FOR STACKS

METHOD OF FINISHING EAVES AND EDGES
For Flat and Steep Roof Construction



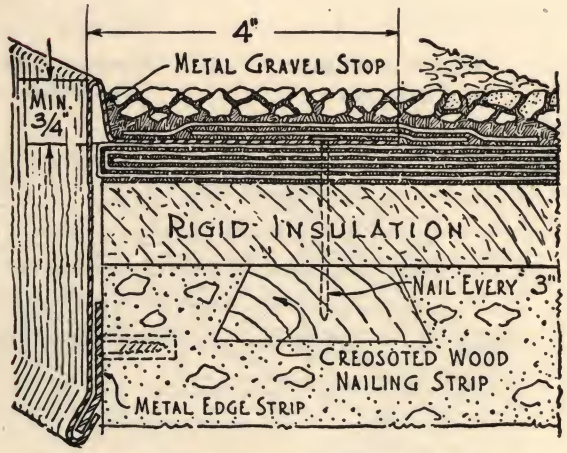
METAL EAVE FOR CONCRETE DECK

Note—First two plies of Felt in roofing turned over succeeding plies and back 12"

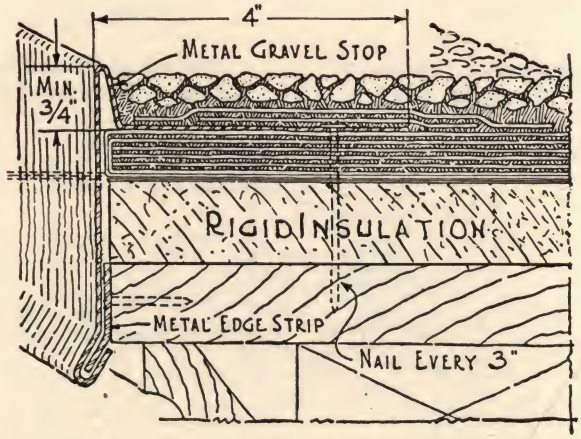


METAL EAVE FOR WOOD DECK

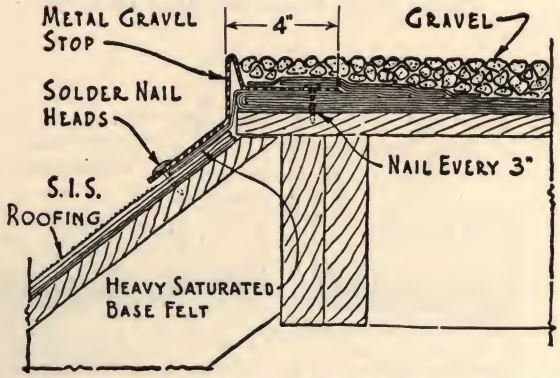
Note—First two plies of Felt in roofing turned over succeeding plies and back 12"



METAL EAVE FOR CONCRETE DECK
SHOWING NAILING THRU INSULATION

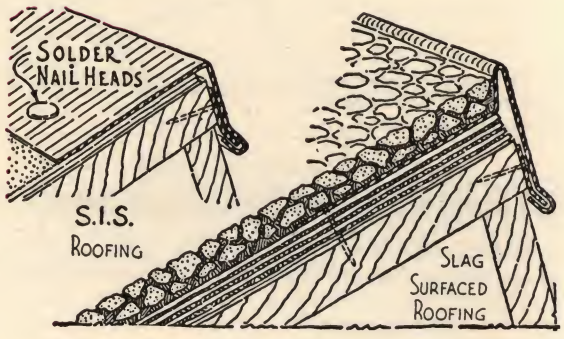


METAL EAVE FOR WOOD DECK
SHOWING NAILING THRU INSULATION

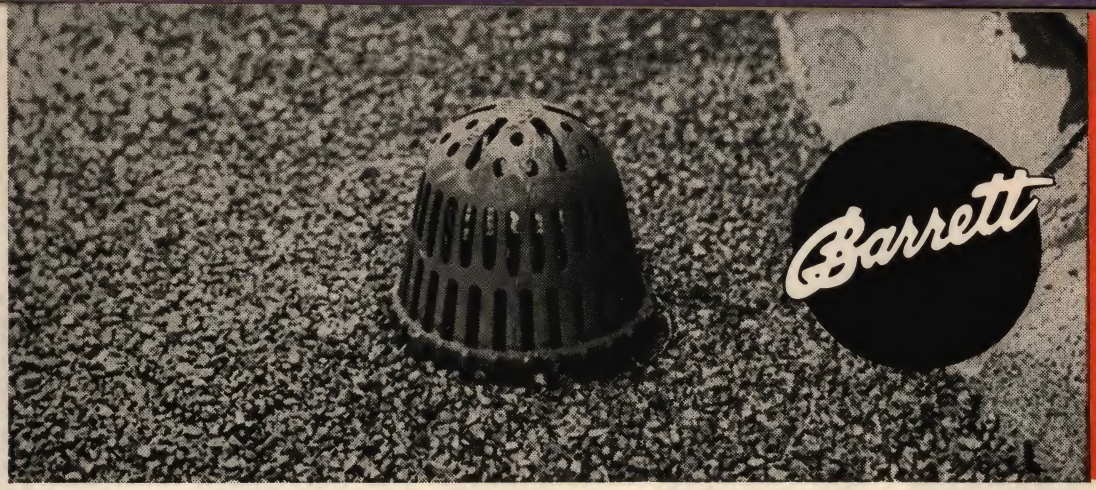


Note—First two plies of Felt in roofing turned over succeeding plies and back 12"

DETAIL FOR FLAT & STEEP ROOF CONNECTION



METAL RIDGE FOR SAWTOOTH SKYLIGHT



ROOF DRAINS SHOULD BE PERMANENT

In all types of roof construction, it is consistent that roof drains be at least as permanent as the roof coverings they serve. They should be easy to install, should effectively function under all prevailing conditions, and should provide against clogging of drainage outlets by leaves or debris deposited on the roof proper.

The Barrett-Holt Roof Connection

The Barrett-Holt Roof Connection meets the demand for a completely assembled, long-lived and dependable roof drain fixture. The connection is made up in a variety of types to meet the particular conditions involved. It consists of a roof fitting with roof locking attachment; a component flashing flange; and an expansion joint. The types furnished for use in connection with inside leader lines are equipped with a cast metal tile or gravel stop; a strainer plate; and serviceable cast metal strainer.

The flashing flange furnished as a component part of the Barrett-Holt Roof Connection assures a dependable connection between the leader head unit and the roof covering. The expansion joint makes possible a flexible, yet water and gas-tight joint between the connection and the pipe or fixture joined to it. The changes resulting from shrinkage, settlement, and expansion or contraction are thereby properly provided for without danger of broken joints or troublesome leaks.

They are used: (1) As a roof leader connection where inside leader or conductor pipe is installed; (2) As a roof vent connection where soil or waste vent pipe is installed; (3) As a connection where any pipe, flag-pole, tank support or similar fixture is carried through the roof deck of a building.

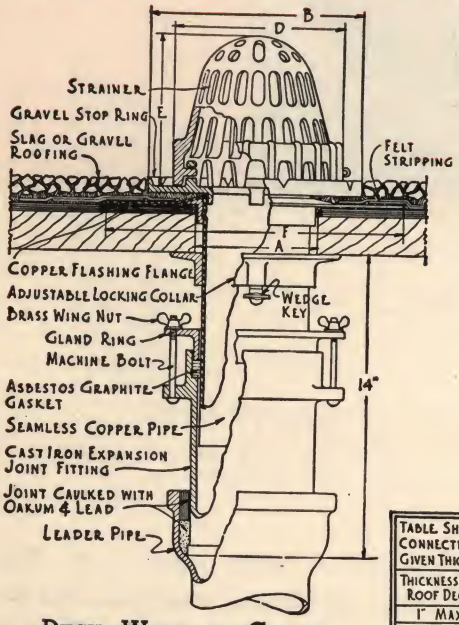
Used More Than Thirty Years

More than thirty years of use under exacting conditions have proved the Barrett-Holt Roof Connection to be the most dependable device of its kind on the market. It simplifies specification procedure—a type to meet each need can be specified in a few words. It is easy to install, and allowances covering extra parts or assembly costs are not necessary.

The Barrett-Holt Roof Connections described are standard, and are recommended for use on all types of flat and steep roof construction, in accordance with the specifications outlined.

BARRETT-HOLT ROOF LEADER CONNECTIONS FOR INTERIOR DRAINAGE
For Roofs Having Ample Working Space Below the Roof Deck

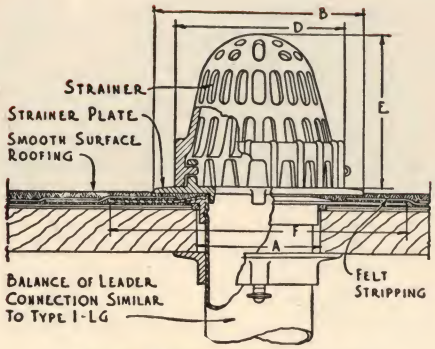
FOR FLAT ROOF DECKS



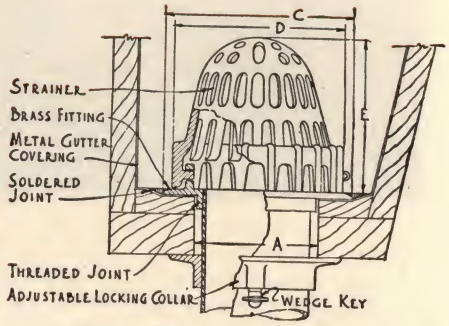
DECK, WOOD OR GYPSUM
SLAG OR GRAVEL SURFACE
TYPE 1-LG

TABLE SHOWING LENGTH OF CONNECTION REQUIRED FOR GIVEN THICKNESS OF ROOF DECK	
THICKNESS OF ROOF DECK	LENGTH OF CONNECTION
1" MAX.	10"
3" "	12"
5" "	14"
7" "	16"
9" "	18"

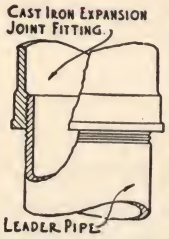
NOTE -
WHEN SCREW THREAD PIPE IS TO BE USED IN BUILDINGS CONSTRUCTED OF STEEL, CONCRETE, BRICK, STONE OR SIMILAR NON-SHRINKABLE MATERIAL, AND THE EXPANSION AND CONTRACTION OF THE LEADER PIPE WILL NOT EXCEED 1", A CONNECTION 2" SHORTER MAY BE USED. THE MINIMUM LENGTH OF THE CONNECTION IS 10"



DECK, WOOD OR GYPSUM
SMOOTH SURFACE
TYPE 1-LS



DECK, WOOD OR GYPSUM
METAL COVERED GUTTERS
TYPE 1-LM



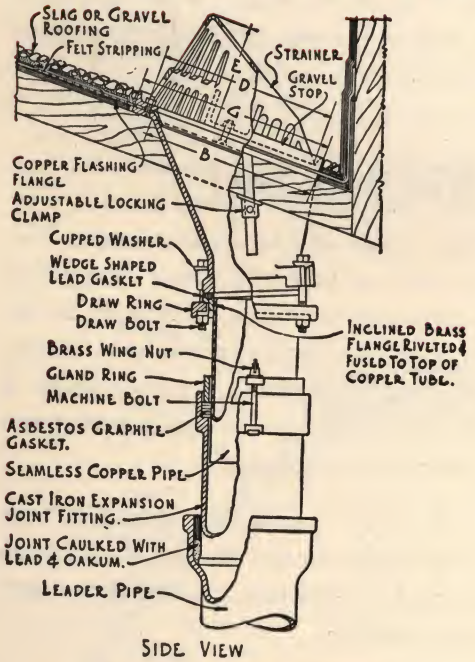
FOR THREADED PIPE

SIZE OF PIPE	A	B	C	D	E	F
3"	4"	8"	7"	6¾"	6⅝"	12"x12"
4"	5"	8"	7"	6¾"	6⅝"	12"x12"
5"	6"	10⅜"	9¾"	9½"	8½"	14"x14"
6"	7"	10⅜"	9¾"	9½"	8½"	16"x16"
8"	9"	11¾"	11"	10½"	9½"	18"x18"
10"	11"	14¼"	13½"	13"	11"	20"x20"

DIMENSION TABLE

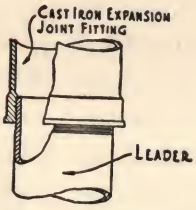
NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

FOR STEEP ROOF DECKS

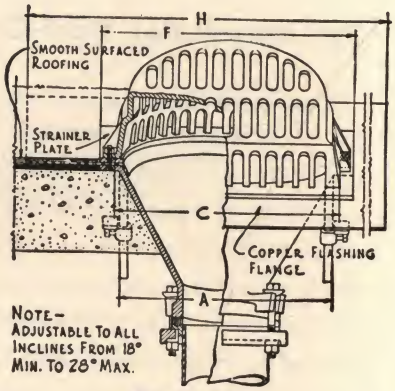


SIDE VIEW

DECK, WOOD OR GYPSUM
STEEP SLAG OR GRAVEL SURFACE
TYPE 2-LG



FOR THREADED
PIPE

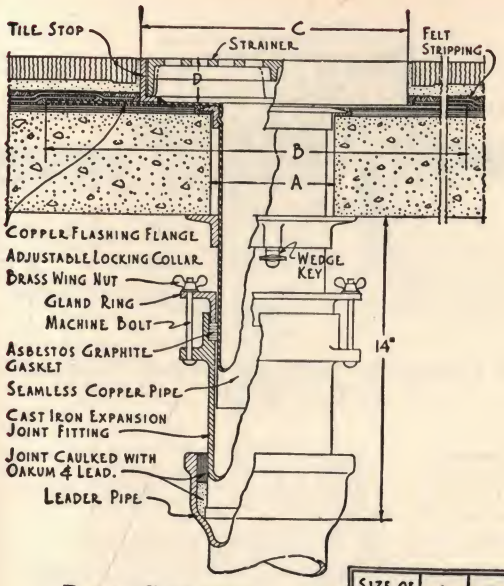


FRONT VIEW
DECK, CONCRETE
STEEP, SMOOTH SURFACE
TYPE 2-LS

SIZE OF PIPE	A	B	C	D	E	F	G	H
3"	9⅞"	6¾"	10⅜"	7⅞"	4⅜"	10⅞"	7⅞"	18"x18"
4"	10⅜"	8⅜"	11⅜"	8⅝"	5⅜"	12¼"	9⅛"	20"x20"
5"	11⅜"	9⅛"	12½"	9⅛"	5½"	13⅝"	10½"	22"x22"
6"	12¾"	10⅜"	13¾"	10"	5⅝"	14¼"	11¾"	24"x24"
8"	THIS CONNECTION ON SPECIAL ORDER.							

DIMENSION TABLE

Used on inclined roofs ranging from 12° to 42° and having interior drainage. Range of variation of the standard connection is from 18° to 28°. For lesser inclines ranging from 12° to 18°, or greater inclines from 28° to 42°, special fittings are furnished.



DECK, CONCRETE TILE OR SIMILAR SURFACE TYPE 1-LT

SIZE OF PIPE	A	B	C	D
3"	4"	18"x18"	10⅜"	¾" TO 3½" UNIT OF VARIATION ¼"
4"	5"	18"x18"	10⅜"	
5"	6"	18"x18"	10⅜"	
6"	7"	18"x18"	10⅜"	
8"	9"	ON SPECIAL ORDER ONLY		
10"	11"			

SPECIFICATION FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 1-LG, 1-LS, 1-LM AND 1-LT

8a/2

PREPARATION OF DECK—The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with leader pipe.

Barrett-Holt Roof Leader Connection, Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

FOR WOOD OR PRECAST GYPSUM DECKS (Types 1-LG, 1-LS and 1-LM)—Where built-up roofing is used as a roof covering, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before application of finished roof surfacing.

IMPORTANT—The copper flashing flange being an integral part of the Types 1-LG, 1-LS and 1-LM Connections, shall in no case be removed. If the flange is bent, it shall be straightened and made smooth before it is set in place. The flashing flange shall be secured to the roof deck with nails wherever possible.

FOR CONCRETE DECKS (Type 1-LT)—Before the application of the cement bed or the finished surfacing material, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 2-LG AND 2-LS

PREPARATION OF SURFACES—The opening through the roof deck shall be of proper size to receive the Roof Leader Connection, and shall be concentric with leader pipe.

INSTALLATION OF LEADER CONNECTIONS—First—Barrett-Holt Roof Leader Connection, Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Second—Barrett-Holt Roof Leader Connection shall be adjusted to fit the roof incline and draw-bolts tightened to obtain a water-tight joint. The Connection shall be set in place so that the lower surface of the iron flange shall be flush with the finished surface of the roof deck. The adjustable locking clamps shall be brought up tightly against the under-side of the roof deck and firmly fastened with the set screws so that the Connection is made integral with the roof deck.

Third—At each drainage point a section of the valley roofing not less than three (3) feet wide shall be carried up the inclined surface of the roof deck not less than two (2) feet. Roofing shall terminate at the outer edge of the iron flange of the Connection.

Fourth—After all roofing Felt has been laid and before the finished wearing surface is applied, the surface of the iron flange of the Connection shall be thoroughly cleaned and the copper flashing flange embedded in Plastic ELASTIGUM Cement. If the flange is bent it shall be straightened and made smooth before being set in place. Flashing flange shall be nailed wherever possible. Iron gravel stop ring or strainer plate shall be set in Plastic ELASTIGUM Cement and firmly drawn down by brass nuts.

Fifth—The cast iron strainer shall be fastened in place (if a brass or aluminum strainer is desired, it shall be specified).

Sixth—The copper Flashing Flange shall be thoroughly mopped with hot bitumen into which, while hot, the steep roofing shall be applied and brought up to the gravel stop or strainer plate.

Seventh—The valley roofing shall be laid and brought up to the gravel stop or strainer plate.

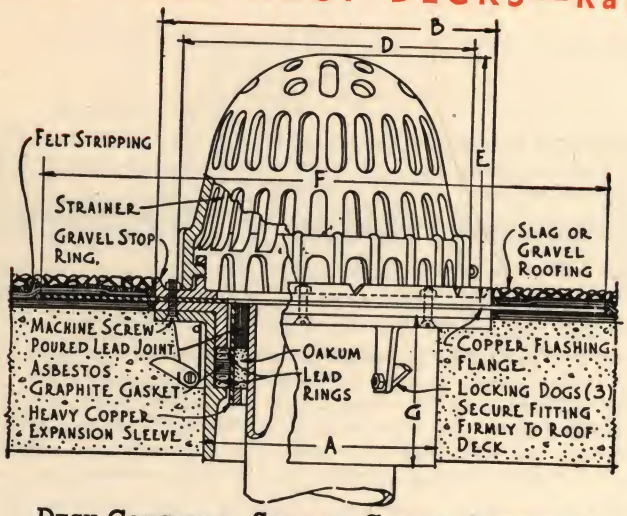
Eighth—The gland ring, gasket and expansion joint fitting shall be set in place and the last length of leader pipe cut to proper length and placed in position. The lower end of the expansion joint fitting shall be not less than fourteen (14) inches from the bottom of the veins on the side of the roof bowl.

Ninth—The gasket and gland ring shall be brought down into the expansion joint fitting, bolted and tightened sufficiently by the wing nuts to obtain a water-tight connection. The joint between the expansion joint and the leader pipe shall then be made.

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

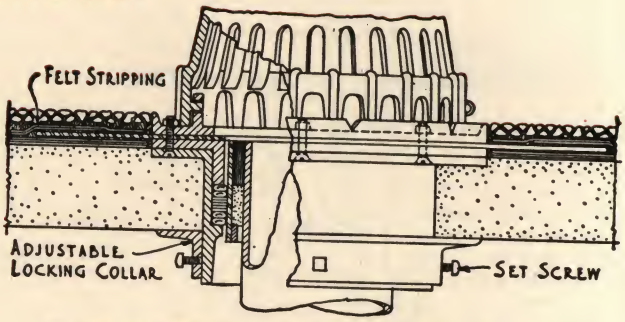
BARRETT-HOLT LEADER CONNECTIONS FOR INTERIOR DRAINAGE
For Roofs Having Restricted Working Space Below the Roof Deck

FOR FLAT ROOF DECKS—Raised Strainer

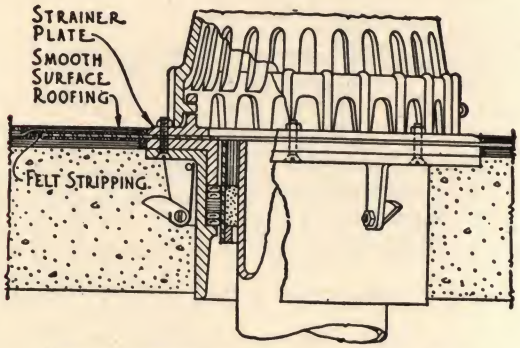


DECK CONCRETE—SLAG OR GRAVEL SURFACE
TYPE 6-LG

SIZE OF PIPE	A	B & C	D	E	F	G
3"	6¼"	10¾"	9½"	8½"	16"x16"	4½"
4"	7¼"	10¾"	9½"	8½"	18"x18"	4½"
5"	8¼"	11¾"	10½"	9½"	20"x20"	4½"
6"	9¼"	11¾"	10½"	9½"	20"x20"	4½"
8"	11¼"	14¼"	13"	11"	24"x24"	4½"

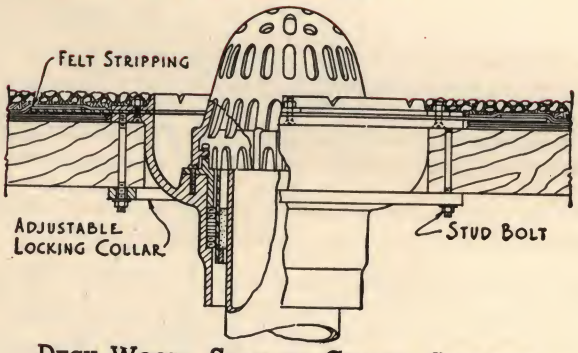


DECK CONCRETE—SLAG OR GRAVEL SURFACE
TYPE 6-LG



DECK CONCRETE—SMOOTH SURFACE
TYPE 6-LS

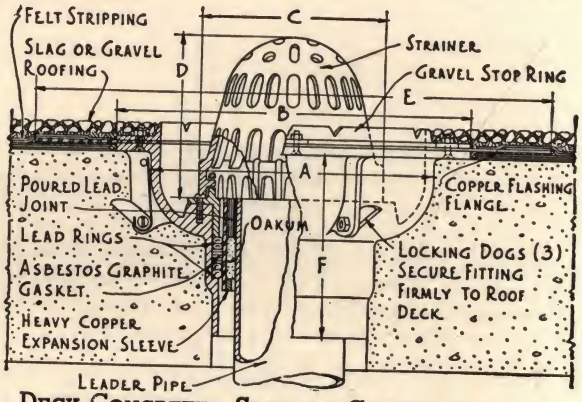
FOR FLAT ROOF DECKS
Sump Type Strainer



DECK WOOD—SLAG OR GRAVEL SURFACE
TYPE 5-LG

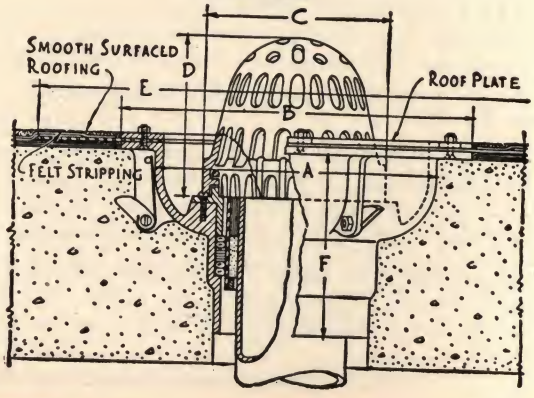
NOTE—
STUD BOLTS AND ADJUSTABLE LOCKING COLLAR USED ONLY FOR WOOD OR GYPSUM ROOF DECKS.

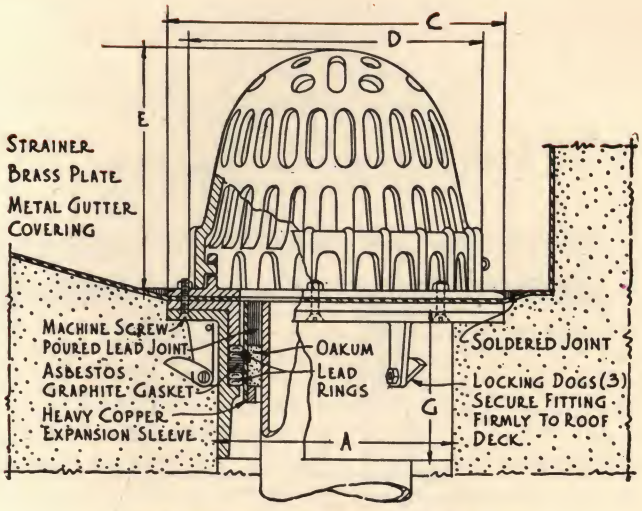
SIZE OF PIPE	A	B	C	D	E	F
3"	10¼"	12⅝"	6¾"	6⅛"	20"x20"	7"
4"	12¼"	14⅝"	9½"	8½"	24"x24"	7"
5"	12¼"	14⅝"	9½"	8½"	24"x24"	7"
6"	13¼"	15⅝"	10½"	9½"	24"x24"	7"
8"	15¼"	17⅝"	13"	11"	26"x26"	7"



DECK CONCRETE—SLAG OR GRAVEL SURFACE
TYPE 5-LG

At Right:
DECK, CONCRETE
—SMOOTH
SURFACE
TYPE 5-LS





DECK CONCRETE—METAL COVERED
TYPE 6-LM

These types are used as leader connections on flat roofs having interior drainage, except roofs covered with tile or a similar material, and where working space below the roof deck is restricted.

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 6-LG, 6-LS AND 6-LM

8a/2

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with the leader pipe.

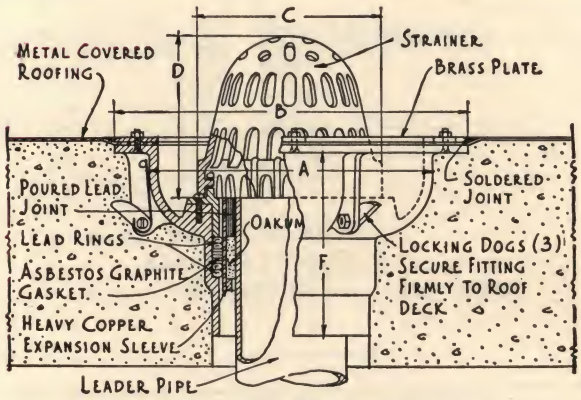
Barrett-Holt Roof Leader Connection Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

Where built-up roofing is used as a roof covering, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before application of finished surfacing.

Note—Where gypsum or wood roof deck exceeds three and one-half (3½) inches in thickness, Types 6-LG, 6-LS and 6-LM Connections are equipped with threaded stud bolts which hold the adjustable locking collar in place.

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.



DECK CONCRETE—METAL COVERED
TYPE 5-LM

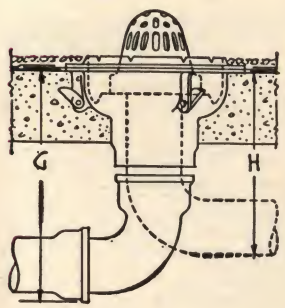


TABLE OF MIN. DIMENSIONS		
SIZE OF PIPE	G	H
3"	17¾"	11½"
4"	18¼"	12"
5"	18¾"	12½"
6"	19¼"	13"
8"	20"	13½"

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 5-LG, 5-LS AND 5-LM

PREPARATION OF SURFACES—The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with the leader pipe.

INSTALLATION OF LEADER CONNECTIONS—First—Barrett-Holt Roof Leader Connection Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Second—Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

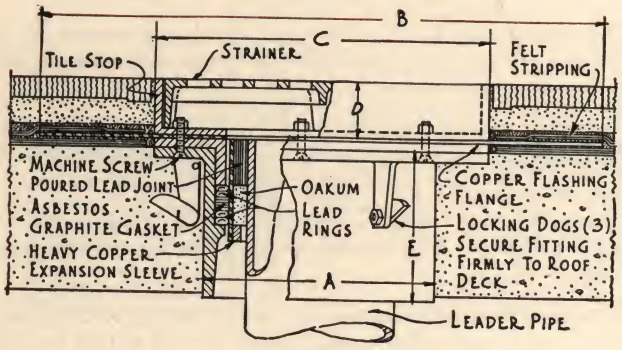
Note—Where built-up roofing is used as a roof covering, two (2) plies of felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.

When used in connection with gypsum or wood roof decks, types 5-LG, 5-LS and 5-LM Connections are equipped with threaded stud bolts which hold the adjustable locking collar in place.

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

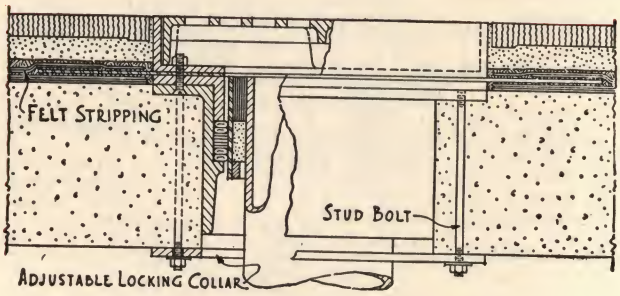
BARRETT-HOLT ROOF LEADER AND VENT CONNECTIONS
For Flat Roofs

FLAT ROOF LEADER CONNECTIONS—Flat Type Strainer
Tile Surfaced Roofs



CONCRETE DECK
TILE OR SIMILAR SURFACE
TYPE 6-LT

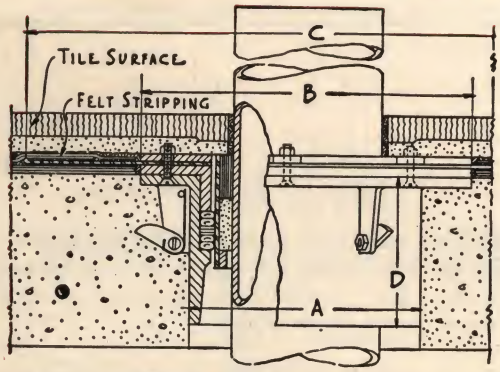
NOTE—
STUD BOLTS AND ADJUSTABLE LOCKING COLLAR USED ONLY FOR WOOD OR GYPSUM ROOF DECKS.



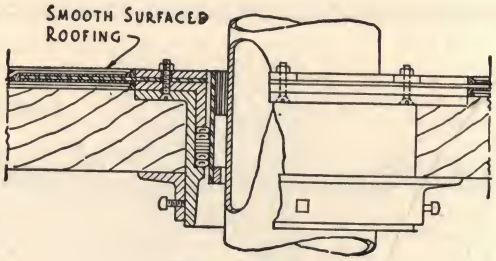
POURED GYPSUM DECK
TILE OR SIMILAR SURFACE
TYPE 6-LT

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

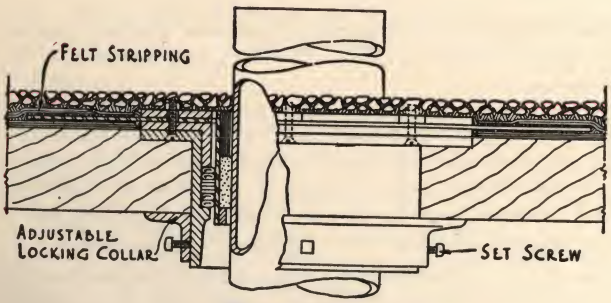
FLAT ROOF VENT CONNECTIONS



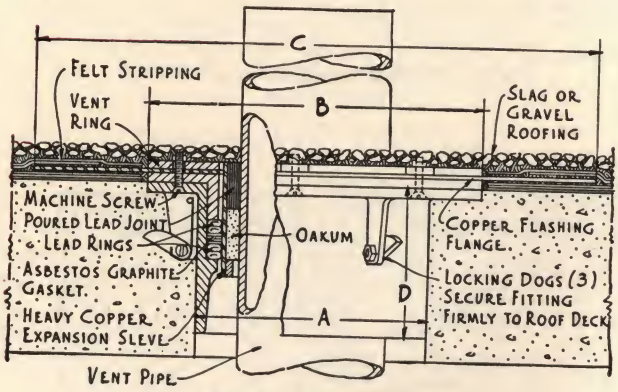
DECK, CONCRETE
TILE OR SIMILAR SURFACE
TYPE 6-VT



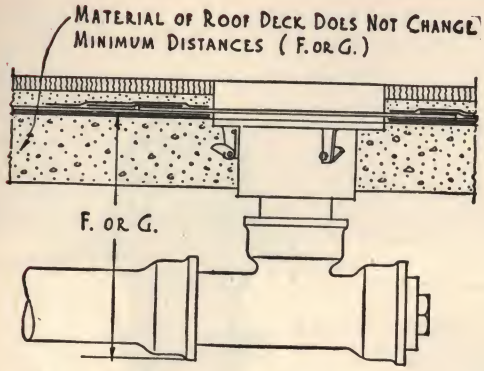
DECK, WOOD
SMOOTH SURFACE
TYPE 6-VS



DECK, WOOD
SLAG OR GRAVEL SURFACE
TYPE 6-VG



DECK, CONCRETE
SLAG OR GRAVEL SURFACE
TYPE 6-VG



F – REFERS TO CAST IRON SOIL PIPE
G – REFERS TO WROUGHT IRON OR STEEL SCREW PIPE.

SIZE OF PIPE	A	B	C	D	E	F	G
3"	6¼"	20"x20"	10½"	1" TO 3½" UNIT OF VARIATION ¼"	4½"	15¼"	13½"
4"	7¼"	20"x20"	10½"		4½"	15¾"	14¼"
5"	8¼"	20"x20"	10½"		4½"	16¼"	14¾"
6"	9¼"	20"x20"	10½"		4½"	16¾"	15¼"
8"	11¼"	24x24	SPEC.		4½"	17¾"	17¾"

DIMENSION TABLE

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS TYPE 6-LT

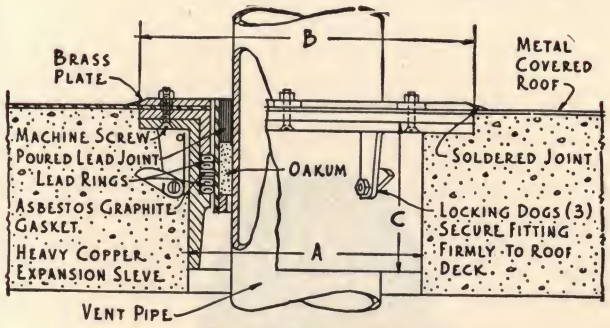
8a/2

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with leader pipe.

Barrett-Holt Roof Leader Connection Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

Before the application of the cement bed or the finished surfacing material, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.



DECK, CONCRETE
METAL COVERED ROOFS, TYPE 6-VM

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

SIZE OF PIPE	A	B	C	D
3"	6¼"	8¾"	16"x16"	4½"
4"	7¼"	9¾"	18"x18"	4½"
5"	8¼"	10¾"	20"x20"	4½"
6"	9¼"	11¾"	20"x20"	ø 4½"
8"	11¼"	14⅜"	24"x24"	4½"

DIMENSION TABLE

SPECIFICATIONS FOR TYPES 6-VG, 6-VS, 6-VT AND 6-VM

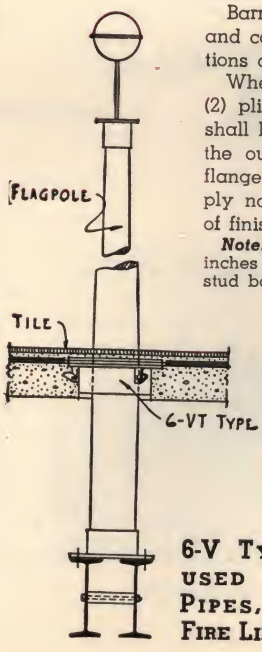
The opening through roof deck shall be of proper size to receive Roof Vent Connection and shall be concentric with vent pipe.

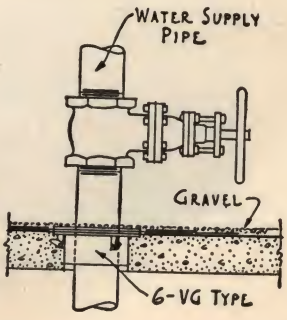
Barrett-Holt Roof Vent Connection Type ..... shall be installed at all vent openings and shall be of proper size to connect with .... inch vent pipe as shown on Drawing No. .....

Barrett-Holt Roof Vent Connections shall be installed and connected complete in strict accordance with directions of manufacturer.

Where built-up roofing is used as a roof covering, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before the application of finished surfacing.

Note: Where gypsum or wood roof decks exceed 3½ inches in thickness, connections are equipped with threaded stud bolts which hold adjustable locking collar in place.

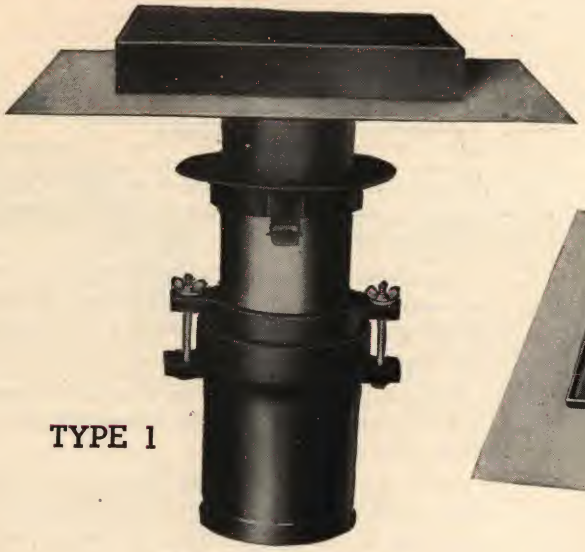




6-V TYPES CAN BE USED FOR WATER PIPES, FLAGPOLES, FIRE LINES, ETC.

BARRETT-HOLT ROOF LEADER AND VENT CONNECTIONS

FOR ROOFS HAVING AMPLE WORKING SPACE BELOW DECK



TYPE 1

Flat Strainer for Flat Roof, Tile or Similar Surface
(see pages 40 and 41)

TYPE 2

Projected Strainer for Steep Roof, Slag or Mineral or Metal Surface
(see pages 40 and 41)

TYPE 1

Projected Strainer for Flat Roof, Slag or Gravel or Metal Surface
(see pages 40 and 41)

FOR ROOFS HAVING RESTRICTED WORKING SPACE BELOW DECK

TYPE 5

Sump Type Strainer for Flat Roof, Slag or Gravel or Metal Surface
(see pages 42 and 43)

TYPE 6

Projected Strainer for Flat Roof, Slag or Gravel or Metal Surface
(see pages 42 and 43)

TYPE 6

Flat Strainer for Flat Roof, Tile Surface
(see pages 44 and 45)

TYPE 6

Vent Connection for Flat Roof, Slag or Gravel or Metal Surface
(see pages 44 and 45)

MEMBRANE WATERPROOFING

Waterproofing in some form is essential to the life and stability of many structures. Just what this form should be is not exactly determinable by mathematical calculation. However, with a careful study of conditions, with the knowledge of definite factors and with the help of past experience, a form of waterproofing may be devised for the specific conditions encountered. Proper waterproofing materials, intelligently selected and skillfully applied, are vital factors in making structures watertight.

For most satisfactory results the use of the membrane method of waterproofing is recommended. This method correctly followed protects and prolongs the life of the structure. It provides an elastic and continuous waterproofing blanket composed of alternate layers of felt or fabric and waterproofing bitumen.

The membrane system is used on structures exposed to hydrostatic pressure or conditions of excessive dampness or moisture, particularly those below ground surface, such as foundations of buildings, tunnels, subways, or other sub-construction. It is equally adaptable to the waterproofing of reservoirs, bridges, retaining walls, etc., and should be applied to the surface exposed to such pressure.

DAMP-PROOFING—NOT UNDER HYDROSTATIC PRESSURE

Damp-proofing is designed to prevent the penetration of moisture or dampness and may be distinguished from waterproofing in that constant "heads" or hydrostatic pressures are not involved.

Damp-proofing generally concerns walls or surfaces exposed to moisture above grade, and substructure surfaces where dampness—and not hydrostatic pressure—exists. The materials or methods employed should provide for the primary function of damp-proofing systems, that of keeping walls dry, and should prevent discoloration. Damp-proofings may be applied to exterior or interior surfaces—depending on conditions.

Cracks or other structural failure resulting from settlement, ground movement, or other cause, may result in leakage regardless of the efficacy of the damp-proofing method employed.

Plaster Bonding

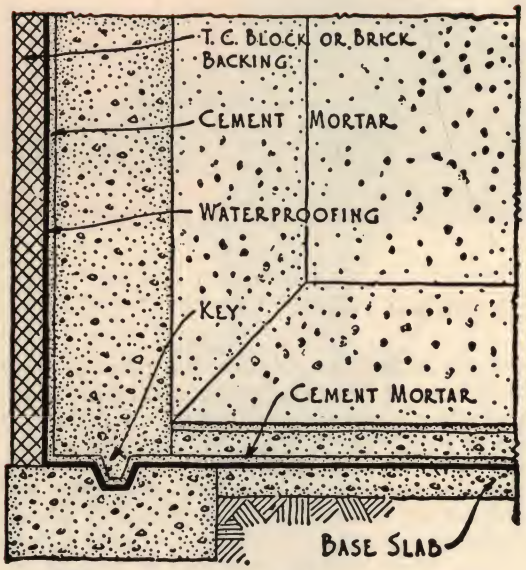
Damp-proof coatings, when applied to the interior and used as a plaster bond should be continuous and should provide for a firm bond between the wall surface and the succeeding coats of plaster or other interior wall finish. Several methods covering such treatment are included in this section.

SPECIFICATIONS AND WORKMANSHIP

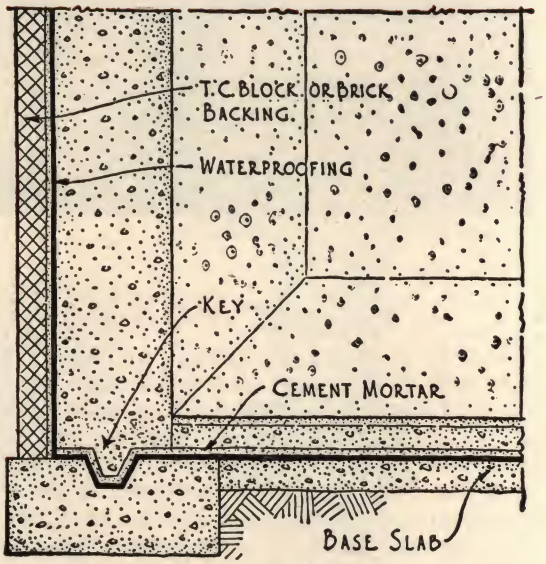
The specifications for Waterproofing and Damp-proofing in the following pages have been developed out of extensive research and practical experience. The materials specified are manufactured expressly for the purposes recommended. The application methods described are accepted as standard practice. Best results may be secured by following the specification procedure outlined and by employing experienced contractors in the execution of the work. Barrett Approved Waterproofing Contractors are skilled in the arts of waterproofing and damp-proofing. Their employment and adherence to the specifications outlined assure satisfactory results. Waterproofing or damp-proofing, however, is not effective in the case of structural failure caused by settlement, etc.

APPLYING MEMBRANE WATERPROOFING

MEMBRANE METHOD OF SUBSTRUCTURE WATERPROOFING



WATERPROOFING DETAIL FOR OUTSIDE WALLS, FOOTINGS, ETC. - INSIDE APPLICATION -

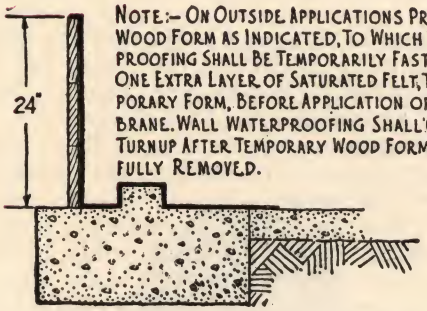


WATERPROOFING DETAIL FOR OUTSIDE WALLS, FOOTINGS, ETC. - OUTSIDE APPLICATION -

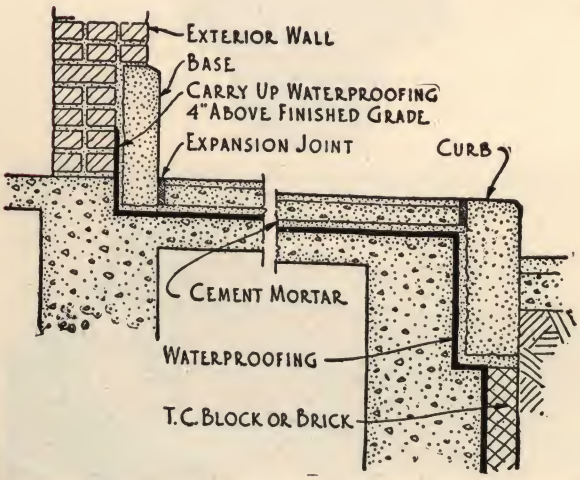
NOTE:- ON INSIDE APPLICATIONS WATERPROOFING MEMBRANE, AS SPECIFIED, IS APPLIED DIRECTLY TO THE TILE OR BRICK BACKING AS INDICATED

IMPORTANT - ALL MASONRY SHALL BE DESIGNED TO WITHSTAND THE MAXIMUM HYDROSTATIC PRESSURE.

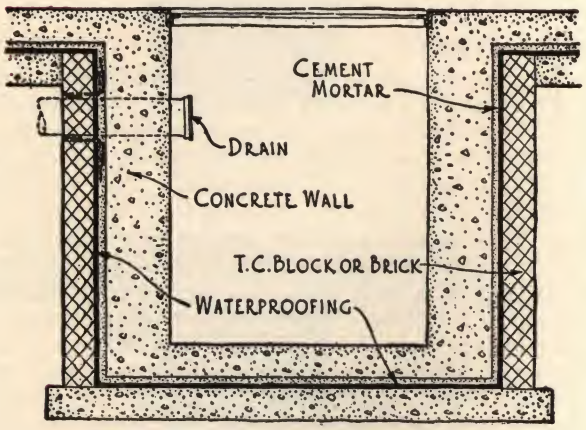
SEE PAGE 51 FOR WATERPROOFING SPECIFICATIONS



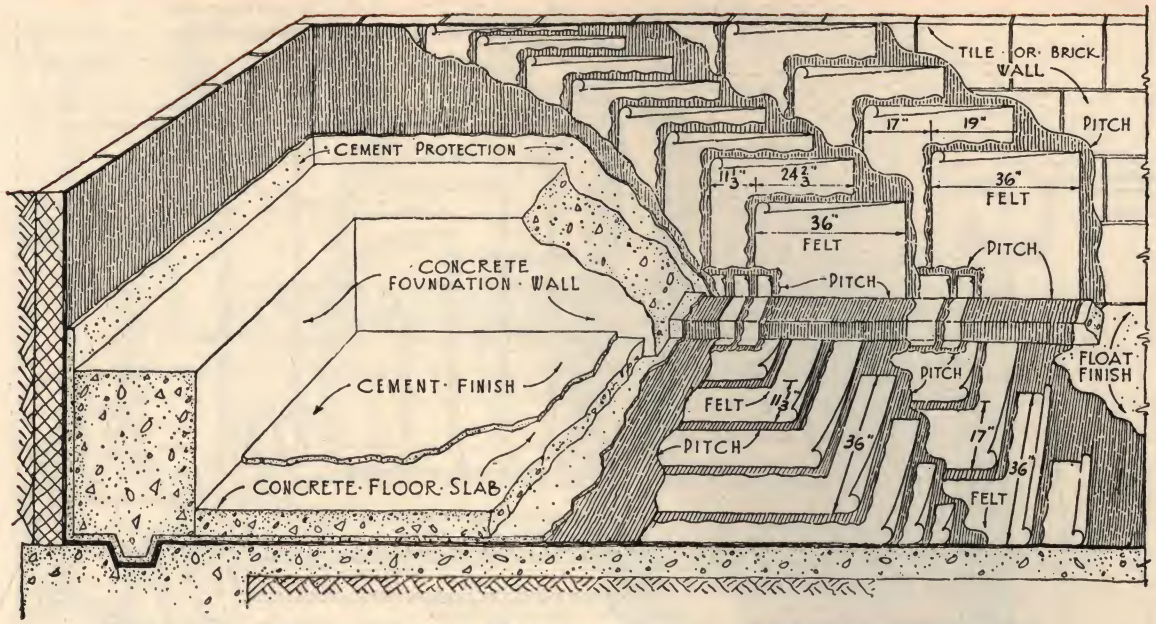
NOTE:- ON OUTSIDE APPLICATIONS PROVIDE TEMPORARY WOOD FORM AS INDICATED, TO WHICH THE FLOOR WATERPROOFING SHALL BE TEMPORARILY FASTENED. PROVIDE ONE EXTRA LAYER OF SATURATED FELT, TACKED DRY TO TEMPORARY FORM, BEFORE APPLICATION OF SPECIFIED MEMBRANE. WALL WATERPROOFING SHALL OVERLAP MEMBRANE TURNUP AFTER TEMPORARY WOOD FORMS HAVE BEEN CAREFULLY REMOVED.



WATERPROOFING DETAIL FOR VAULTS & TUNNELS



WATERPROOFING DETAIL FOR SUMPS & PITS



DETAIL FOR SUBSTRUCTURE WATERPROOFING—5 PLY CONSTRUCTION

IMPORTANT—All Masonry Shall Be Designed to Withstand Maximum Hydrostatic Pressure

SPECIFICATIONS FOR WATERPROOFING AND DAMP-PROOFING

Note—The waterproofing shall be applied by a waterproofing contractor approved by Barrett, who has had experience in successfully applying this type of built-up waterproofing on sub-grade construction, and who can refer to work of a similar nature that he has executed in a satisfactory manner.

PREPARATION OF SURFACES—All surfaces on which the waterproofing is to be applied shall be firm, smooth and dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of ..... plies of BARRETT Tarred Felt and ..... moppings of BARRETT Waterproofing Pitch.

APPLICATION OF WATERPROOFING—First—Coat the entire surface on which the waterproofing is to be applied with BARRETT Waterproofing Pitch into which, while hot, embed a layer of BARRETT Tarred Felt, as specified, following this with alternating moppings of Pitch and layers of Felt until ..... moppings of Pitch and ..... layers of Felt have been applied. Each layer of Felt shall be thoroughly rubbed into the hot Pitch, and the entire surface shall be immediately mopped with Pitch to insure thorough embedding of the Felt. The Felt shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Second—Not less than .....* pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahrenheit.

Third—At wall angles and footings and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fourth—Where laps are left to be connected, they shall be not less than ten (10) inches wide, and shall be temporarily protected by one-half (½) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dry, and mopped with Pitch before proceeding with the work.

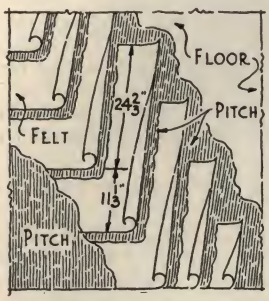
Fifth—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent protective finish or wall.

Sixth—The waterproofing shall be immediately protected by tile, brick, concrete or similar material as specified.

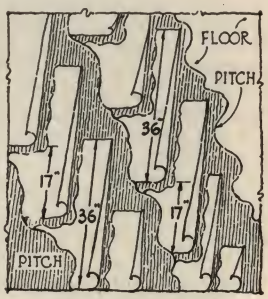
* **Architect's Note**—For five (5) ply construction six (6) alternating moppings of Pitch shall be required, and not less than one hundred and eighty (180) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

For four (4) ply construction five (5) alternating moppings of Pitch shall be required, and not less than one hundred and fifty (150) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

For three (3) ply construction four (4) alternating moppings of Pitch, shall be required, and not less than one hundred and twenty (120) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

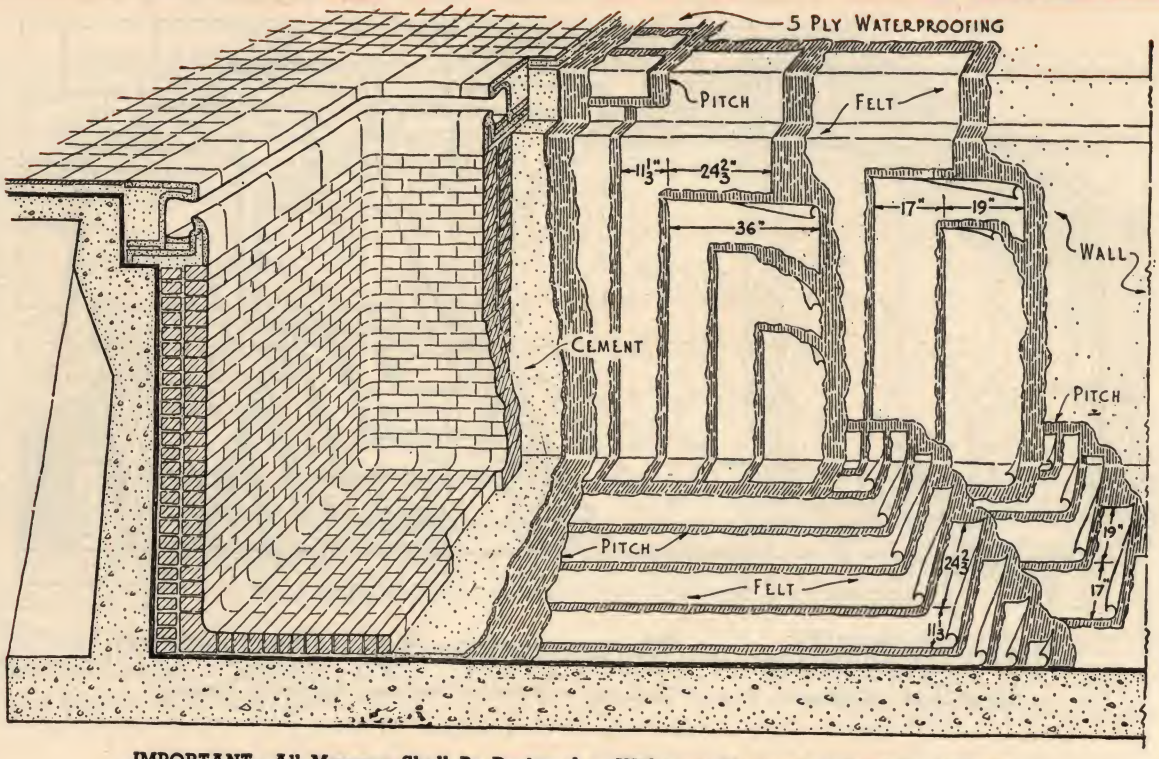


DETAIL FOR 3 PLY CONSTRUCTION



DETAIL FOR 4 PLY CONSTRUCTION

MEMBRANE METHOD FOR WATERPROOFING SWIMMING POOLS, SHOWER ROOMS, ETC.



IMPORTANT—All Masonry Shall Be Designed to Withstand Maximum Hydrostatic Pressure

SPECIFICATIONS FOR MEMBRANE METHOD FOR WATERPROOFING SWIMMING POOLS, SHOWER ROOMS, ETC.

***Note*—The waterproofing shall be applied by a waterproofing contractor approved by Barrett, who has had experience in successfully applying this type of built-up waterproofing on swimming pool construction and who can refer to work of a similar nature that he has executed in a satisfactory manner.**

PREPARATION OF SURFACES—All surfaces on which the waterproofing is to be applied shall be firm, smooth and dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of five (5) plies of BARRETT Tarred Felt, as specified, and six (6) moppings of BARRETT Waterproofing Pitch.

APPLICATION OF WATERPROOFING—First—Coat the entire surface on which the waterproofing is to be applied with BARRETT Waterproofing Pitch into which, while hot, lay two (2) plies of BARRETT Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, mopping with BARRETT Waterproofing Pitch the full nineteen (19) inch lap on each sheet, so that in no place shall Felt touch Felt.

Second—Coat the entire surface uniformly with BARRETT Waterproofing Pitch into which, while hot, lay three (3) plies of BARRETT Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with BARRETT Waterproofing Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet, so that in no place shall Felt touch Felt. All Felt shall be thoroughly and smoothly embedded into the hot Pitch, shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Third—Coat the entire surface with a heavy, uniform mopping of BARRETT Waterproofing Pitch.

Fourth—Not less than one hundred and eighty (180) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahrenheit.

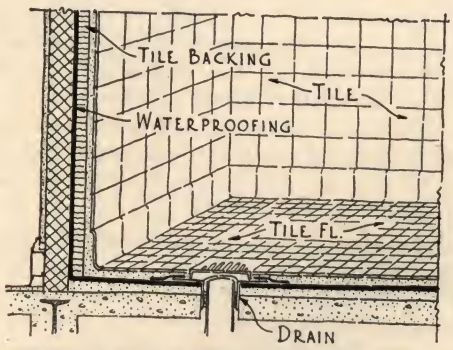
Fifth—At wall angles and footings and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Sixth—Where laps are left to be connected, they shall be not less than ten (10) inches wide and shall be temporarily protected by one-half (½) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dried, and mopped with Pitch before proceeding with the work.

Seventh—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent protective finish.

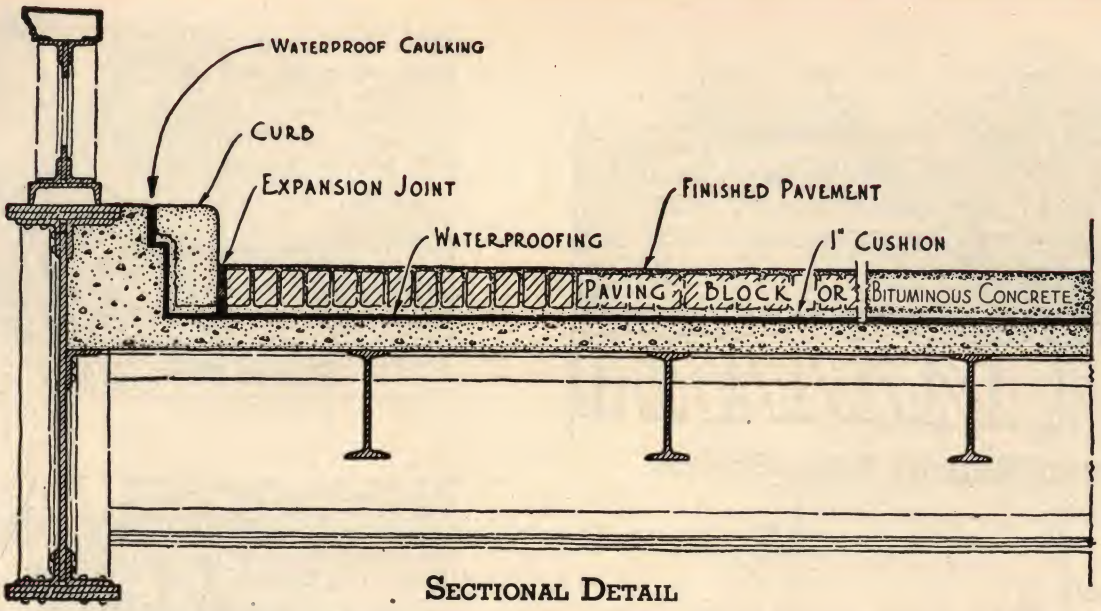
Eighth—The waterproofing shall be immediately protected by tile, brick, concrete or similar material (as specified) and a continuous course of at least one-half (½) inch of Portland Cement Mortar, one (1) to two (2) mix, applied directly over the waterproofing membrane before such finished course is installed.

***Note*—Where swimming pool is provided with steam coil or hot water inlet, all such pipes shall be thoroughly insulated.**



DETAIL FOR SHOWER ROOM

8a/2



SECTIONAL DETAIL

This specification covers application for waterproofing membrane of pitch and felt. For alternate types and details, see page 52.

SPECIFICATIONS FOR MEMBRANE METHOD FOR WATERPROOFING ELEVATED HIGHWAYS OR BRIDGES, RAMPS, ETC.

Note—The waterproofing shall be applied by a waterproofing contractor approved by Barrett, who has had experience in successfully applying this type of Built-Up Waterproofing, and who can refer to work of a similar nature that he has executed in a satisfactory manner.

PREPARATION OF SURFACES—All surfaces on which the waterproofing is to be applied shall be firm, smooth, dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of ..... plies of BARRETT Tarred Felt, as specified and ..... moppings of BARRETT Waterproofing Pitch.

APPLICATION OF WATERPROOFING—First—Coat the entire surface on which the waterproofing is to be applied, with BARRETT Waterproofing Pitch, into which, while hot, embed a layer of BARRETT Tarred Felt, following this with alternating moppings of Pitch and layers of Felt until .....moppings of Pitch and ..... layers of Felt have been applied. Each layer of Felt shall be thoroughly rubbed into the hot Pitch, and the entire surface shall be immediately mopped with Pitch to insure thorough embedment of the Felt. The Felt shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Second—Spread over the entire surface a heavy, uniform coating of BARRETT Waterproofing Pitch.

Third—Not less than .....* pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahrenheit.

Fourth—At wall angles, curbs, deflection joints, and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fifth—Where laps are left to be connected, they shall be not less than ten (10) inches wide and shall be temporarily protected by one-half (½) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dried, and mopped with Pitch before proceeding with the work.

Sixth—Felt and Pitch membrane shall be carried up curbs, walls, and areas around columns, pipes, etc., not less than four (4) inches above the finished wearing surface.

Seventh—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent finished wearing surface.

Eighth—The finished wearing surface as specified shall be immediately installed over the waterproofing membrane.

Note No. 1—Expansion joints shall be provided throughout the finished wearing surface. All such expansion joints shall extend from the top of the finished wearing surface through to the waterproofing membrane.

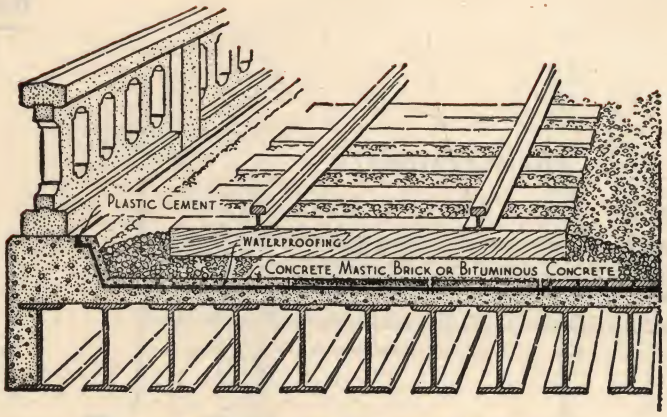
Note No. 2—Where outlets or scuppers are provided as indicated on drawings, they shall be placed level with the waterproofing course and properly Felt-stripped.

Architect's Note—For five (5) ply construction, Felt shall be laid after the two (2), two (2) and one (1) method, with alternate moppings of Waterproofing Pitch throughout. Not less than one hundred and eighty (180) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed Waterproofing.

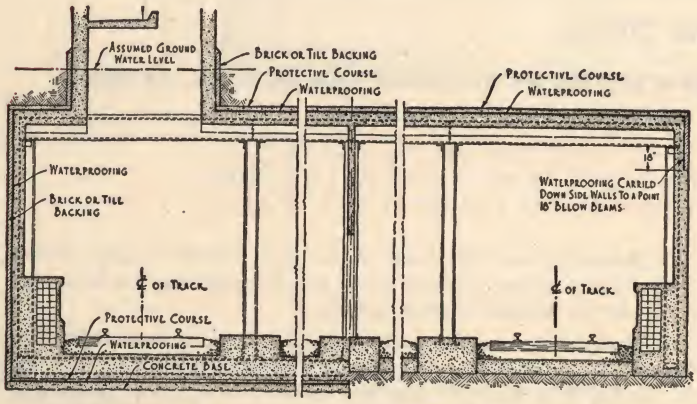
For four (4) ply construction not less than one hundred and fifty (150) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed Waterproofing.

West Side Elevated Express Highway, New York, N. Y.
750,000 sq. ft. of Barrett waterproofing

MEMBRANE METHOD FOR WATERPROOFING
Solid Deck Railroad Bridges and Underground Subways



TYPICAL RAILROAD BRIDGE SECTION

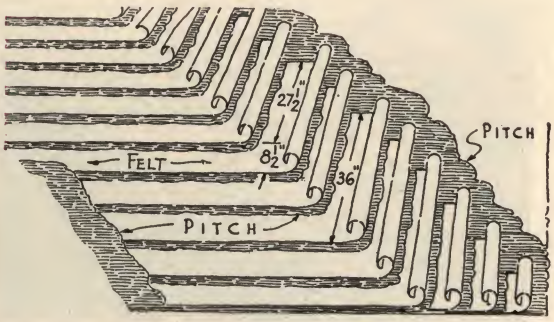


½ SECTION SHOWING PROTECTION AGAINST WATER PRESSURE

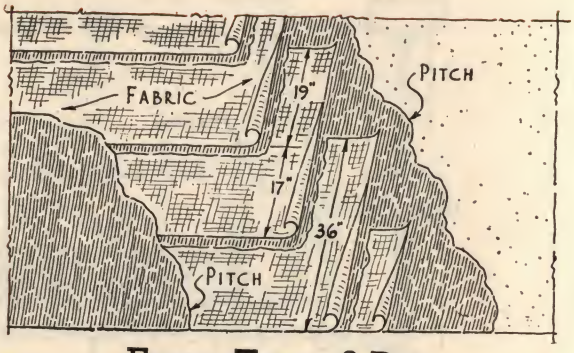
½ SECTION SHOWING PROTECTION AGAINST SURFACE WATER

TYPICAL SUBWAY SECTIONS

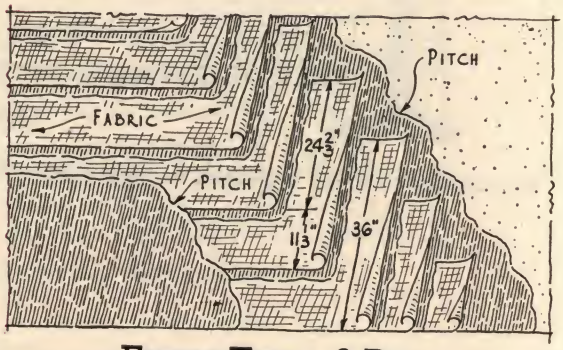
The following illustrations show various methods of waterproofing structures of this type. For specification form, refer to page 51. For Flashing Details, see page 53.



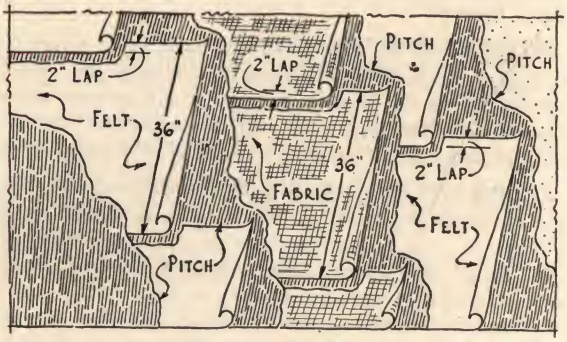
FELT AND PITCH TYPE—4 PLY



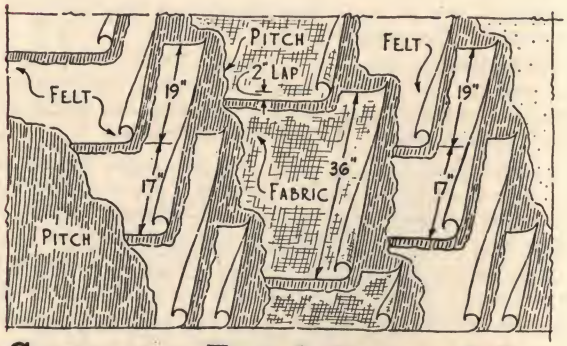
FABRIC TYPE—2 PLY



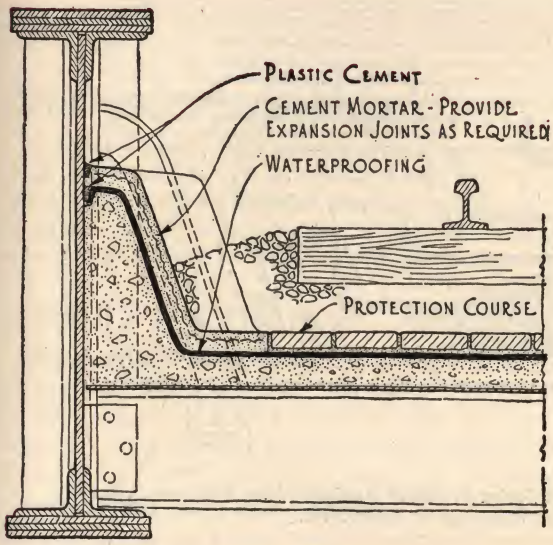
FABRIC TYPE—3 PLY



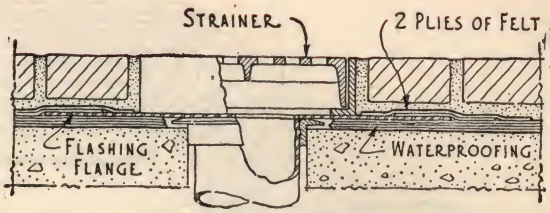
COMBINATION FELT & FABRIC—3 PLY



COMBINATION FELT & FABRIC—5 PLY

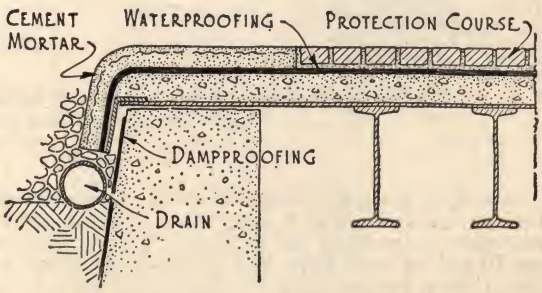


METHOD OF FLASHING AT STEEL GIRDERS

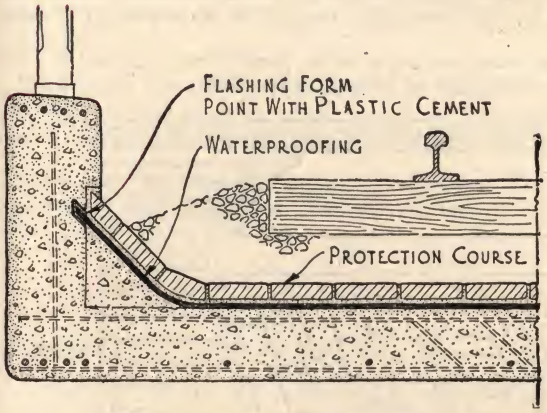


8a/2

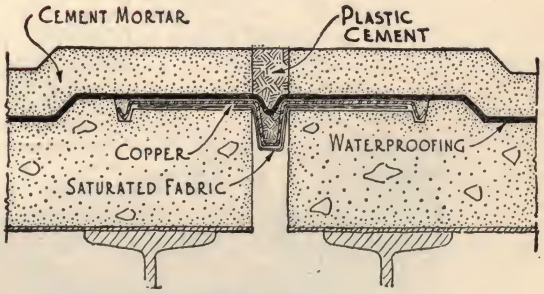
DETAIL OF DECK DRAIN



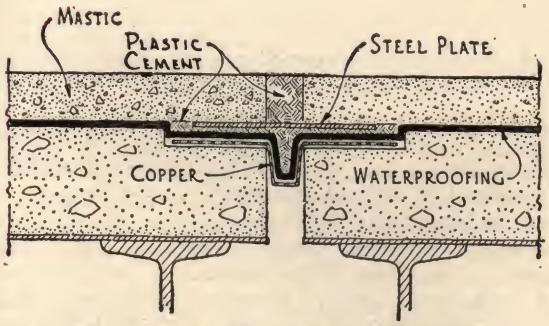
DETAIL OF WATERPROOFING AT EXPANSION END



METHOD OF FLASHING AT CONCRETE CURBS



DETAIL OF EXPANSION JOINT CONCRETE PROTECTION COURSE



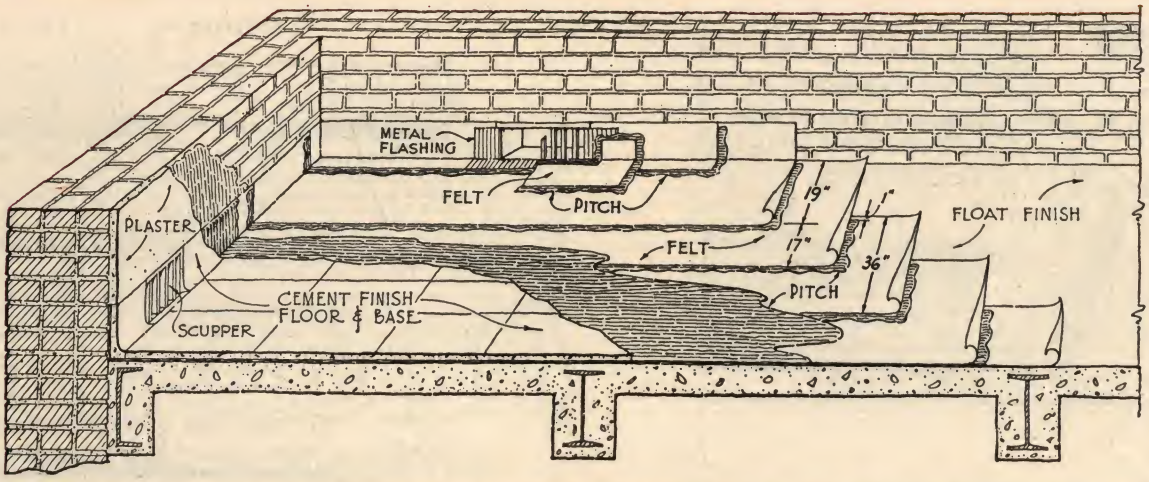
DETAIL OF EXPANSION JOINT MASTIC PROTECTION COURSE

The membrane method of waterproofing is recommended for use on solid deck railroad bridges or other bridges, ramps, highways, etc.

The types detailed conform to methods recommended by the American Railway Engineering Association, and incorporate the use of BARRETT Waterproofing Pitch and Tarred Felt and/or Waterproofing Fabric.

Architect or Engineer shall clearly indicate type to be used and specifications shall follow A.R.E.A. standards or form as outlined on page 51.

MEMBRANE METHOD FOR WATERPROOFING SUPERSTRUCTURE CONCRETE OR WOOD FLOORS



This System of Waterproofing is Designed for the Purpose of Providing a Factor of Safety Against Water Damage From Operation of Sprinkling System, or in Case of Fire, Washing of Floors, etc.

SPECIFICATION FOR CONCRETE FLOORS

First—Over the entire surface lay two (2) plies of BARRETT Tarred Felt, as specified, lapping each sheet nineteen (19) inches over preceding one, mopping with BARRETT Waterproofing Pitch to within one (1) inch of upper edge, after which spread over the entire surface a heavy, uniform coating of waterproofing pitch.

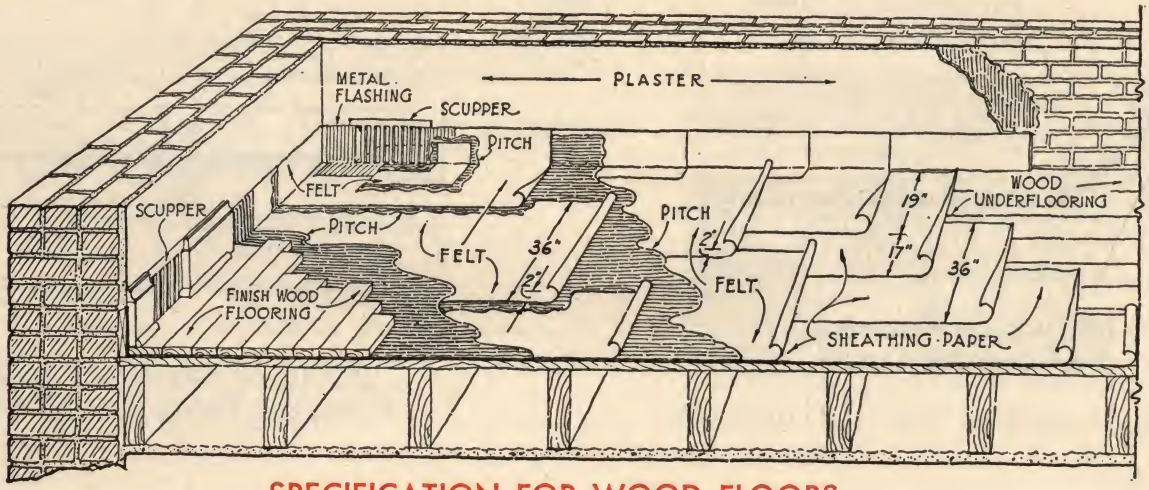
Second—Not less than sixty (60) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

Third—At places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fourth—Felt and Pitch membrane shall be carried up walls and areas around columns, pipes, etc., not less than three (3) inches above the finished flooring, and shall be properly fastened in place and protected.

Fifth—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent finished flooring.

Sixth—The waterproofing shall be immediately protected by the application of the finished flooring as specified.



SPECIFICATION FOR WOOD FLOORS

First—Over the entire surface lay two (2) thicknesses of sheathing paper or unsaturated felt, weighing not less than five (5) pounds per one hundred (100) square feet, lapping each sheet nineteen (19) inches over the preceding one, and nail as often as is necessary to hold in place.

Second—Over the entire surface lay one (1) ply of BARRETT Tarred Felt as specified, lapping each sheet two (2) inches over preceding one and nail as often as is necessary to hold in place.

Third—Coat the entire surface uniformly with BARRETT Waterproofing Pitch, after which over the entire surface lay one (1) ply of BARRETT Tarred Felt, lapping each sheet two (2) inches over preceding one, and mopping the two (2) inch lap on each sheet with BARRETT Waterproofing Pitch, so that at no place shall Felt touch Felt. Care shall be taken that all layers of Felt break joints with underlying layers.

Fourth—Over the entire surface spread a heavy, uniform coating of BARRETT Waterproofing Pitch, into which, while hot, embed floor plank.

Fifth—Not less than sixty (60) pounds of BARRETT Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the pitch shall not be heated above four hundred (400) degrees Fahrenheit.

Sixth—(Same as paragraph "Third" above).

Seventh—(Same as paragraph "Fourth" above).

Eighth—(Same as paragraph "Fifth" above).

Ninth—The waterproofing shall be immediately protected by the application of the finished flooring as specified. Each plank shall be set in permanent position before nailing to prevent the nails from tearing the waterproofing membrane, and in no case shall the nails penetrate the flooring upon which the waterproofing rests.

SPECIFICATION FOR DAMP-PROOF PITCH COATING

8a/2

CONDENSED SPECIFICATION

All exterior surfaces and footings, of foundation walls, retaining walls and abutments shall be damp-proofed by the application of one (1) prime coat of CARBOSOTA Creosote Oil and two (2) moppings of Barrett "SPECIFICATION" Pitch (as approved), both applied in strict accordance with the specifications published by Barrett.

COMPLETE SPECIFICATION

PREPARATION OF SURFACES—All surfaces to be damp-proofed shall be dry and clean and free from dirt, dust or foreign materials. All voids, cracks or open joints in the masonry shall be properly pointed up with Portland Cement Mortar before application of the damp-proofing materials.

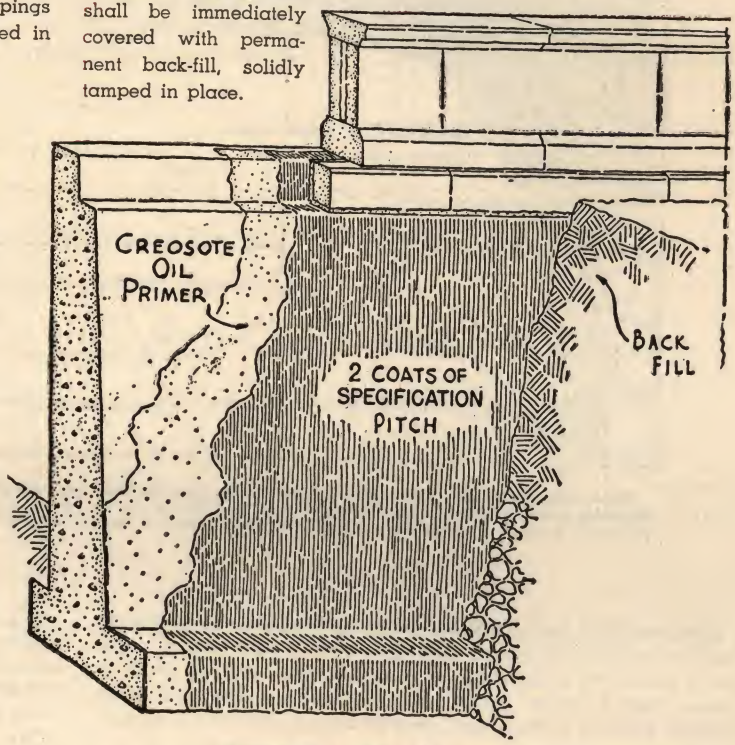
APPLICATION OF DAMP-PROOFING—First—Apply over the entire surface to be damp-proofed, a uniform priming coat of Barrett CARBOSOTA Creosote Oil.

Second—The prime coat of CARBOSOTA Creosote Oil shall be allowed to sufficiently penetrate the masonry, and before thoroughly dry, apply a uniform mop coating of Barrett "SPECIFICATION" Pitch (as approved). The Pitch shall be applied in such manner as will obtain a heavy, continuous coating of Pitch over the entire surface, filling all cracks, voids and crevices and upon completion shall present a dry, glossy appearance.

Third—After the entire surface has been completely covered with the first mopping, follow immediately with second heavy, uniform mopping of "SPECIFICATION" Pitch.

Fourth—Not less than one (1) gallon of CARBOSOTA Creosote Oil and eighty (80) pounds of Pitch shall be used for each one hundred (100) square feet of completed damp-proofing and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahreinheit.

Fifth—Damp-proofing shall be immediately covered with permanent back-fill, solidly tamped in place.



PITCH COATING METHOD

SPECIFICATION USING DAMP-RESISTANT "HYDRONON" FOUNDATION COATING

CONDENSED SPECIFICATION

All exterior surfaces and footings of foundation walls, retaining walls and abutments shall be thoroughly coated with two coats of Barrett HYDRONON Foundation Coating, applied in strict accordance with the specifications published by Barrett.

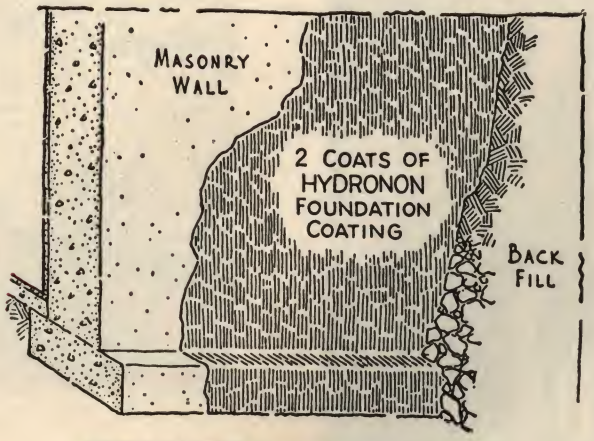
COMPLETE SPECIFICATION

PREPARATION OF SURFACES—All masonry surfaces to which HYDRONON Foundation Coating is to be applied shall be thoroughly dry and free of all dirt, grease, excess cement mortar or other foreign matter that might interfere with its adhesion and penetration. Any open areas in the concrete caused by segregation of coarse aggregates shall be filled in. Rubblestone construction shall be brought to an even surface with cement mortar. All holes and voids in masonry construction shall be carefully filled with Portland Cement Mortar, and all joints struck flush.

APPLICATION—First—The exterior surfaces and footings of foundation walls, retaining walls and abutments, shall be completely covered with two (2) coats of Barrett HYDRONON Foundation Coating applied either by brush or by spray.

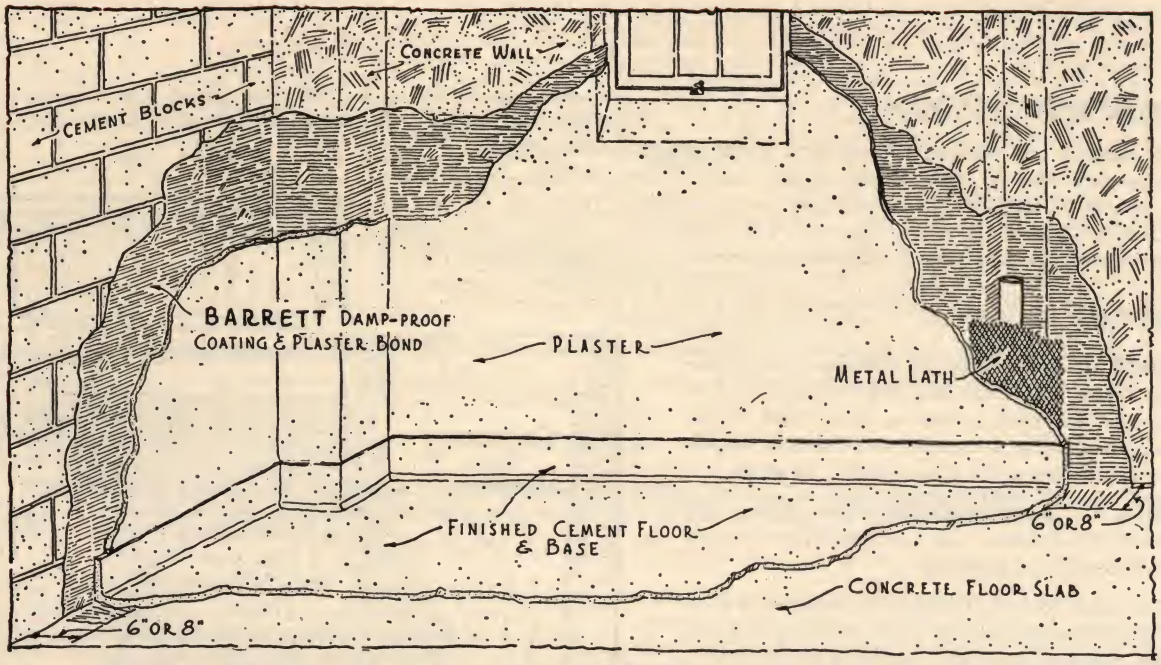
Second—The coating shall be applied thoroughly and evenly from the footings to the soil or grade level so that all surfaces present a uniform black appearance. The second coat shall be brushed or sprayed at right-angles to the first coat so as to assure thorough coverage of the entire surface with a continuous impervious film without holidays, pinholes or spots.

Third—Twenty-four (24) hours shall elapse between the first and second coats. Back-filling of the soil, where required, shall be commenced not more than seven (7) days nor less than one (1) day after the final application of HYDRONON Foundation Coating.



HYDRONON FOUNDATION COATING

DAMP-RESISTANT PLASTER BONDS FOR BASEMENTS NOT UNDER HYDROSTATIC PRESSURE



***Note*—The materials and methods referred to here provide for remedial treatment of damp basements and for a plaster bonding agent where plaster finish is desired. Where water seepage is involved, indicating the presence of water under pressure, outside waterproofing treatment, as referred to on pages 48 and 49 is recommended.**

SPECIFICATION FOR DAMP-RESISTANT PLASTER BONDS

Masonry—All holes and voids in the wall surfaces to be treated shall be carefully filled with Portland Cement Mortar and all joints struck flush. The walls shall be thoroughly dry and free from oil, grease, excess cement mortar or other foreign matter that might interfere with the bonding and penetrating properties of the coating.

Application—The interior surfaces of all exterior walls, including reveals of doors and windows, column coverings and pipe chases, shall be coated with two thorough applications of BARRETT Damp-proof Coating and Plaster Bond (No. 10 Liquid, No. 20 Semi-Mastic) or one trowel coat of No. 30 Plastic Plaster Bond.

(In the case of Hollow Tile walls only one coating of No. 10 Liquid or No. 20 Semi-Mastic shall be required.)

No. 10 Liquid shall be applied by brush or by compressed air spray. No. 20 Semi-Mastic shall be applied by heavy brush, mop or squeegee. No. 30 Plastic shall be applied by trowel to an average thickness of one-sixteenth ($\frac{1}{16}$) inch.

The coating shall be applied thoroughly and evenly until the surface presents a uniform black appearance, care being taken to completely coat all joints, crevices, cut-outs, wall chases and recesses, so as to form a continuous impervious film without holidays, pinholes or brown spots.

The coating shall be applied before any pipes or metal work are installed and shall completely cover the inside surfaces of all walls, as above, being carried out six (6) to eight (8) inches on rough floor slabs.

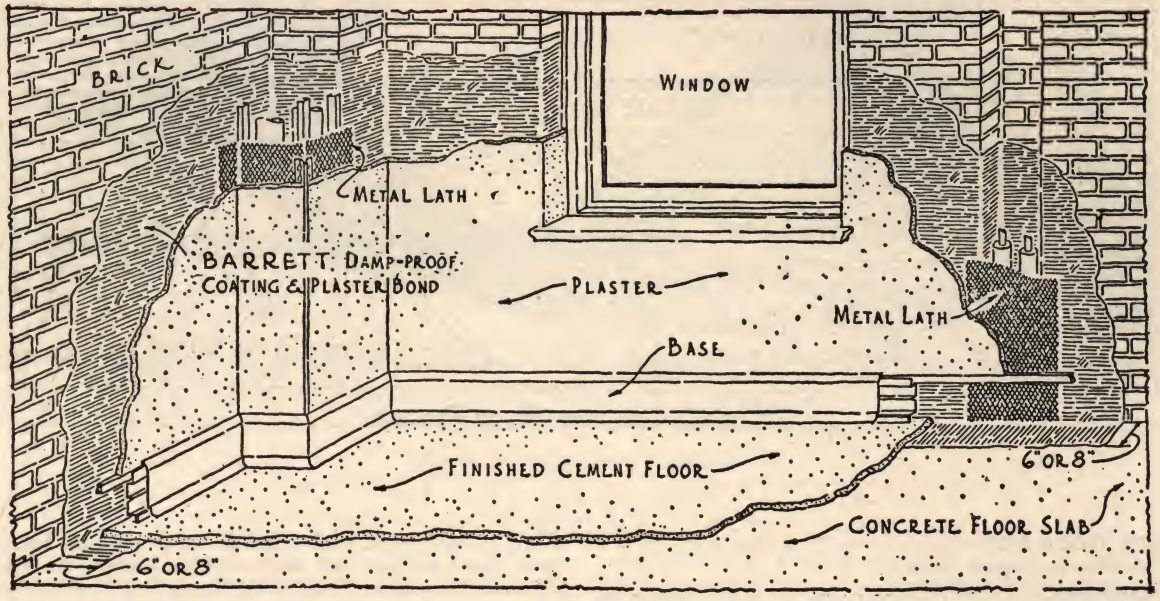
Plastering—The rough or scratch coat of wall plaster shall be applied directly to the plaster bond, but not less than twenty-four (24) hours nor more than seven (7) days after the latter has been applied.

Note: Do not use BARRETT Plaster Bond Coatings on ceilings. Where these materials are to be used in conjunction with stucco or Portland Cement Mortar wall finishes, special application instructions shall be obtained either from the Architect or from Barrett.

Above: **Finished Basement**

Left: **Plastic Method**

Right: **Paint Method**



CONDENSED SPECIFICATION

The interior surfaces of all exterior brick walls, above grade, shall be damp-proofed with suitable BARRETT Damp-proof Coating and Plaster Bond (No. 10 Liquid, No. 20 Semi-Mastic or No. 30 Plastic) applied strictly in accordance with specifications published by Barrett.

COMPLETE SPECIFICATION

MASONRY—All holes and voids in the wall surfaces to be damp-proofed shall be carefully filled with Portland Cement Mortar and all joints struck flush. The walls shall be thoroughly dry, and free from oil, grease, excess cement mortar or other foreign matter that might interfere with the bonding and penetrating properties of the damp-proof coating.

SPECIFICATION FOR LIQUID OR SEMI-MASTIC METHOD

APPLICATION OF DAMP-PROOFING—First—The interior surfaces of all exterior masonry walls, including reveals of doors and windows, column coverings and pipe chases, shall be damp-proofed with two (2) thorough applications of BARRETT Damp-proof Coating and Plaster Bond No. 10 Liquid applied by brush or by compressed air spray (or with two (2) thorough applications of BARRETT Damp-proof Coating and Plaster Bond No. 20 Semi-Mastic, applied by heavy brush, mop or squeegee).

Second—The first coat shall be applied thoroughly and evenly until the surface presents a uniform black appearance, care being taken to completely coat all joints, crevices, cut-outs, wall chases and recesses, so as to form a continuous, impervious film without holidays, pinholes or brown spots.

Third—After the first coat of damp-proofing has been applied, at least twelve (12) hours shall elapse before application of the final coat.

Note: In the case of Hollow Tile walls only one coating of No. 10 Liquid or No. 20 Semi-Mastic shall be required.

SPECIFICATION FOR PLASTIC METHOD

APPLICATION OF DAMP-PROOFING—First—The interior surfaces of all exterior masonry walls, including reveals of doors and windows, column coverings and pipe chases, shall be damp-proofed with one (1) thorough and uniform trowel coat, of an average thickness of one-sixteenth ($\frac{1}{16}$) inch, using BARRETT Damp-proof Coating and Plaster Bond No. 30 Plastic.

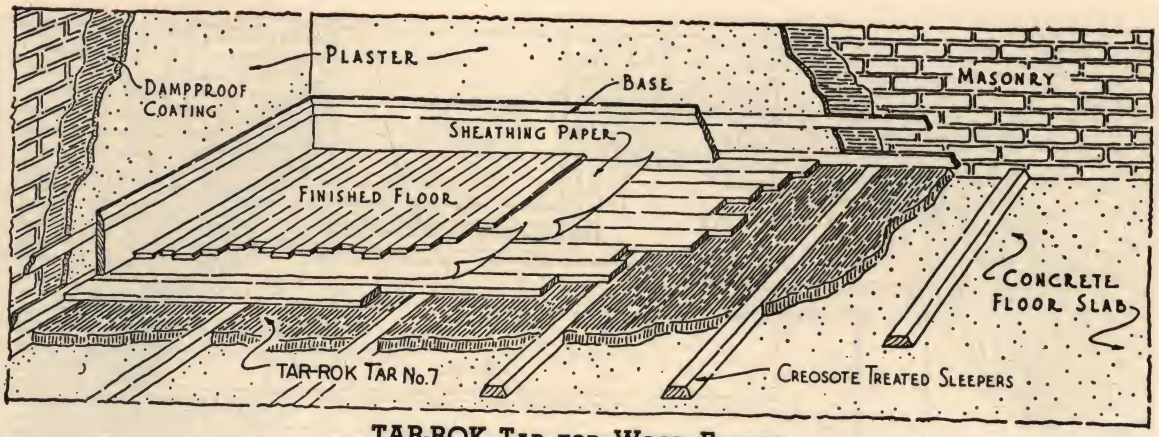
Second—The single coat of Plastic Damp-proofing shall be applied evenly and carefully, being thoroughly worked into all joints, crevices, cracks between mortar and brick, cutouts, wall chases and recesses, so as to form a continuous, impervious coating without holidays, pinholes or brown spots.

GENERAL—The damp-proofing shall be applied before any pipes or metal work are installed, and it shall completely cover the inside surfaces of all walls, as above, being carried out six (6) to eight (8) inches on rough floor slabs.

PLASTERING—The rough or scratch coat of wall plaster shall be applied directly to the final coat of damp-proofing material, but not less than twenty-four (24) hours nor more than seven (7) days after the latter has been applied.

Note: Do not use BARRETT Damp-proof Coatings on ceilings. Where these materials are to be used in conjunction with stucco or Portland Cement Mortar wall finishes, special application instructions shall be obtained either from the Architect or from Barrett.

DAMP-RESISTANT AND WOOD PRESERVATIVE METHODS FOR FLOORS
NOT UNDER HYDROSTATIC PRESSURE



TAR-ROK TAR FOR WOOD FLOORS

SPECIFICATION USING "TAR-ROK" TAR

CONCRETE FLOOR BASE—The concrete floor base shall be dry and leveled off to the proper grade.

WOOD SLEEPERS—All wood sleepers used in floor construction shall be given one preservative coating of CARBOSOTA Creosote Oil applied either by brush or by immersion, to permit thorough penetration into the wood. The wood sleepers shall then be fastened to the concrete floor base or slabs in the manner prescribed by the Architect.

APPLICATION—First—A damp-resistant course of TAR-ROK Tar shall be laid directly on the concrete floor base or slab to a thickness sufficient to bring it flush with the top edge of the sleepers after leveling with a straightedge.

Second—The damp-resistant course shall consist of fine dry sand, thoroughly mixed with BARRETT Sub-Floor Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dried before mixing; and both sand and Sub-Floor Tar shall be heated sufficiently to permit their mixing freely. Neither the sand nor the Tar shall be more than two hundred and twenty-five (225) degrees Fahrenheit when mixed together. If a thick white smoke arises from the mixture indicating that it is overheated, five (5) gallons more of the Tar shall be added to each cubic yard of sand.

Third—This mixture shall then be spread evenly to a thickness one-quarter (¼) to one-half (½) inch higher than the top level of the wood sleepers so that it will compact to a damp-resistant layer exactly flush with the tops of the sleepers.

Fourth—The wood floor base or the finished cement floor shall then be laid directly on the damp-resistant course and the flooring operation completed as prescribed by the Architect.

SPECIFICATION USING "HYDRONON" FOUNDATION COATING

CONCRETE FLOOR BASE—First—The concrete floor base shall be dry and leveled off to the proper grade.

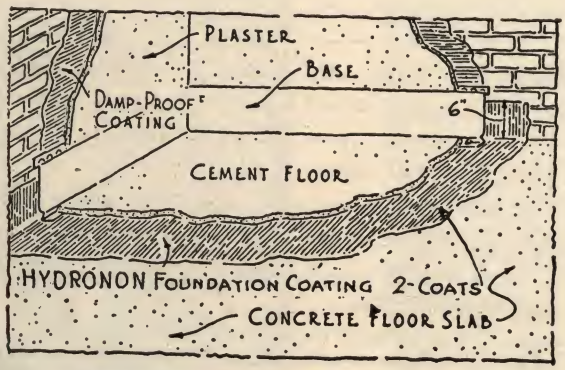
Second—Concrete shall be allowed to set for at least three (3) days before the damp-resistant coating is applied. Where high, early strength cements are used for floors which are to be loaded within twenty-four (24) to forty-eight (48) hours, the coating may be applied after the concrete has set for at least twenty-four (24) hours.

APPLICATION—First—All floors shall be covered by the application of two (2) coats of Barrett HYDRONON Foundation Coating to the concrete floor base; and the finished cement floor or wood subfloor laid therein.

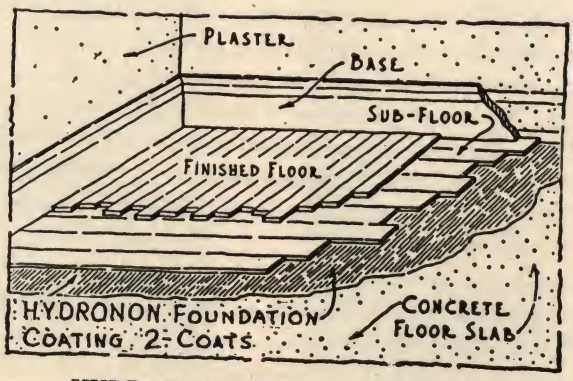
Second—The HYDRONON Foundation Coating shall be applied by brush in two (2) thorough and even coats directly over the concrete floor base until the entire surface presents a uniform black appearance. The second coat shall be brushed at right angles to the first so as to insure thorough coverage of the entire surface with a continuous, impervious film without breaks. Both coats shall be carried up on the surrounding walls, columns, etc., for a distance of at least six (6) inches.

Third—Twenty-four (24) hours shall elapse between the application of the first and second coats.

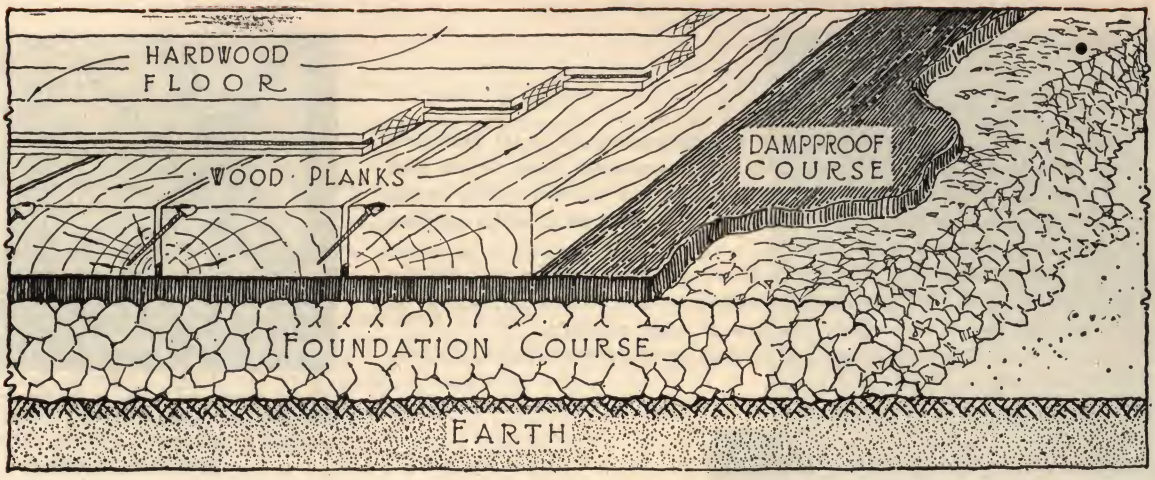
Fourth—Within twelve (12) hours after the application of the final coat, the finished cement floor or the wood subfloor shall be laid as prescribed by the Architect.



HYDRONON FOUNDATION COATING FOR CEMENT FLOORS



HYDRONON FOUNDATION COATING FOR WOOD FLOORS



APPLICATION OVER EARTH

SPECIFICATION FOR APPLICATION OVER EARTH

GRADING—The general contractor for the building shall level off the earth to proper grade to receive the foundation course, and if any filling is necessary it shall be properly puddled and rammed.

FOUNDATION COURSE—The foundation course shall consist of four (4) inch thickness of screened gravel or crushed stone, not any of which shall exceed two and one-half (2½) inches in longest dimension or be less than one-quarter (¼) inch in size, mixed with sufficient Barrett TAR-ROK Tar No. 5 (as specified) so that it will compact under a roller after being spread evenly in place. It shall then be rolled until the stones do not creep under the roller. The Tar for this course may be heated to not more than two hundred (200) degrees Fahrenheit, and in cold weather the stone shall be slightly warmed if necessary, so that the Tar will mix with the stone and the stone spread evenly. The roller used for this work shall weigh not less than three hundred (300) pounds to each foot in length. Sub-Floor Tar used in foundation course shall be approximately (See Note No. 1):

Six (6) gallons for each cubic yard of two and one-half (2½) inches to one (1) inch crushed stone;

Nine (9) gallons for each cubic yard of two and one-half (2½) inches to one-quarter (¼) inch crushed stone;

Seven (7) gallons for each cubic yard of coarse-screened gravel;

Ten (10) gallons for each cubic yard of fine-screened gravel.

Note No. 1—Only sufficient TAR-ROK Tar should be used so that the stone or gravel will properly compact and provide a suitable surface for spreading the damp-proof course.

DAMP-RESISTANT COURSE—The course shall consist of a fine sand thoroughly mixed with Barrett TAR-ROK Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dry before mixing, and both sand and Tar shall be heated sufficiently to make them mix freely, but neither sand nor Tar shall be hotter than two hundred and twenty-five (225) degrees Fahrenheit when being mixed together. If a thick, white smoke arises from the mixture, indicating it is overheated, five (5) gallons more Tar to each yard of sand shall be required. This mixture shall be spread evenly one and one-quarter (1¼) to one and one-half (1½) inches thick (so it will compact to one (1) inch) over the foundation, leveled with straight-edge, and followed closely with plank.

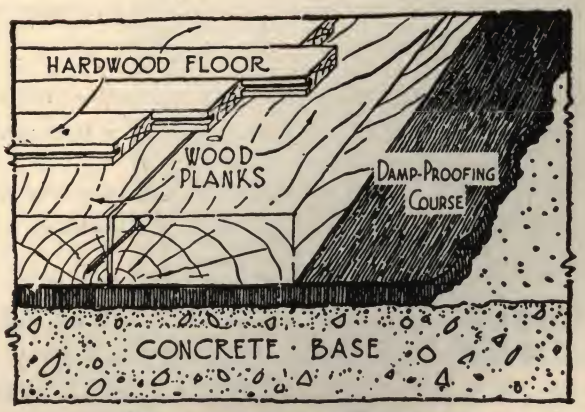
The plank shall be laid on this soft mixture, and bedded on it by hammering until the proper stability is obtained and the plank brought to a proper level and toe-nailed. If after hammering, any plank is below the proper level, the plank shall be taken up and more of the mixture spread on. (The plank and finished flooring shall be furnished and laid by other contractors.)

SPECIFICATION FOR APPLICATION OVER CONCRETE

GRADING—The general contractor for the building shall level off the concrete to proper grade to receive the TAR-ROK Tar.

DAMP-RESISTANT COURSE—The course shall consist of a fine sand thoroughly mixed with Barrett TAR-ROK Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dry before mixing, and both sand and Tar shall be heated sufficiently to make them mix freely, but neither sand nor Tar shall be hotter than two hundred and twenty-five (225) degrees Fahrenheit when being mixed together. If a thick, white smoke arises from the mixture, indicating it is overheated, five (5) gallons more Tar to each yard of sand shall be required. This mixture shall be spread evenly one and one-quarter (1¼) inches to one and one-half (1½) inches thick (so it will compact to one (1) inch) over the foundation, leveled with a straight-edge, and followed closely with dry, well-seasoned plank.

The plank shall be laid on this soft mixture, and bedded on it by hammering until the proper stability is obtained and the plank brought to a proper level and toe-nailed. If after hammering, any plank is below the proper level, the plank shall be taken up and more of the mixture spread on. (The plank and finished flooring shall be furnished and laid by other contractors.)



APPLICATION OVER CONCRETE

METAL PROTECTION
EVERJET Paint

Metal is best protected against corrosion by a maintenance-free paint surfacing. EVERJET Paint, a refined pitch-base coating, provides the required resistance to rust. This glossy black paint is processed uniformly from selected tars and has a high degree of elasticity. It expands and contracts with movement of the surface to which applied, and will not peel under extremes of temperature.

EVERJET Paint resists chemical attack from ordinary gas fumes, smoke and alkaline solutions present in masonry. When applied according to directions, it adheres to all clean surfaces whether metal, wood, glass, concrete or other masonry.

In built-up roofing, EVERJET Paint is used for priming metal flashing flanges, painting vent connections and other surfaces.

Where structural steel is to be encased in concrete or brick, EVERJET Paint provides necessary protection against alkaline solutions from masonry.

EVERJET Paint comes ready for application by brush . . . may be applied by spray.

APPLICATION: Furnished in brushing consistency. For spray application, BARRETT Paint Thinner may be used (less than 10% by volume). The surface to be painted must be dry, clean, and free of rust, grease or scale. On structural steel, sheet or plate iron, a coating of red lead is desirable. Two coats are applied over all metal surfaces. Allow 24 hours drying time between coats. With air pressure (about 65 lbs.) the covering capacity on a generally smooth surface approximates 400 sq. ft. per gal.

COVERAGE:

Surface	Coat	Approx. coverage (one coat)
Metal	First	300 sq. ft. per gal.
Metal	Second	500 sq. ft. per gal.
Light structural steel	First	2 to 4 tons per gal.
Wood	First	100 sq. ft. per gal.
Wood	Second	300 sq. ft. per gal.

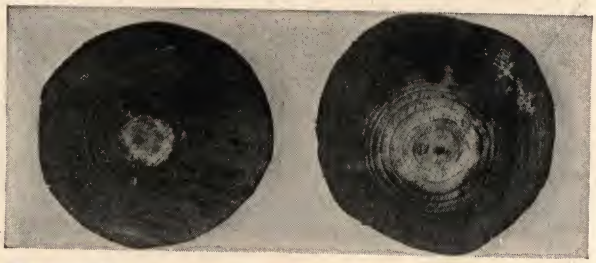
WOOD PRESERVATION
with CARBOSOTA Wood Preservative

Wood constructions, especially when in contact with ground, water, or with foundations of concrete or masonry are protected from decay and termites by treating with CARBOSOTA Wood Preservative. This toxic coal tar creosote oil retards shrinkage, swelling and checking. It remains crystal-free at 5° C. Insoluble in water, it will not leach from the wood. It is applied by non-pressure or surface treatment and penetrates the wood deeply because of its low viscosity.

In built-up roofing, CARBOSOTA Wood Preservative provides lasting protection for wood nailing strips, eaves, edgings or flashing cants.

APPLICATION: Brushed or sprayed in two coats—one coat when dipped. With open tank process the wood is subjected to a hot treatment followed by a cold or cooling treatment.

COVERAGE: The quantity required varies with the dimensions of the lumber to be treated: between 10 gal. per 1000 ft. BM for 12" x 12" timber, and 60 gal. per 1000 ft. BM for 1" x 4" boards. Specific coverages may be obtained on request from the nearest Barrett office.

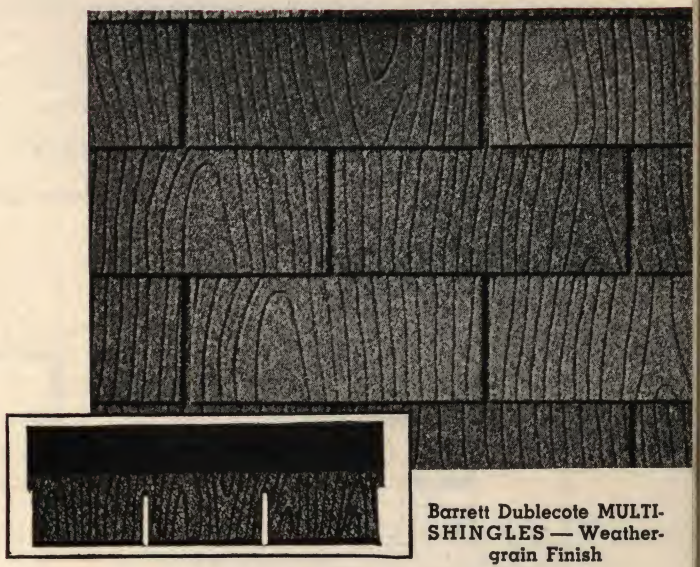


These cross sections of Creosote-treated Loblolly Pine posts show the penetrative powers of Barrett CARBOSOTA Wood Preservative

Termite damage necessitated these extensive repairs.

THE ROOF WITH A FUTURE

At least three facts about BARRETT Asphalt Shingles make them the perfect answer to the roofing requirements of America's post war housing program: first, their low cost and recognized durability; second, their light weight, which makes heavy supporting construction unnecessary, permitting lighter, more economical design of the entire house; third, their mineral surfacing which requires no periodical painting, staining or other preservative treatment. BARRETT Asphalt Singles come in a variety of patterns and colors to suit the most discriminating tastes. Shown here are two popular types. Information regarding these and other BARRETT asphalt shingles and roofings will be furnished upon request.



Barrett Dublecote MULTI-SHINGLES — Weather-grain Finish

BARRETT DUBLECOTE "MULTI-SHINGLES"

This is a double duty shingle, built, as are heavy-duty automobile tires, doubly thick and doubly strong where the shingles get the most wear. Butts have an extra layer of asphalt and an extra layer of mineral granules, which mean longer life, extra weather protection and added beauty. The handsome weather-grain effect is rapidly growing in popularity. A wide range of colors is offered, including solids, blends and tones.

SPECIFICATIONS

Size	Headlap	Exposure	Approx. Wt. per Square	Shingles per Square	Bundles per Square
12" x 36"	2"	5"	210 lbs.	80	3

Underwriters' Class C Rating.

This attractive home is protected by a Barrett Dublecote MULTI-SHINGLE roof

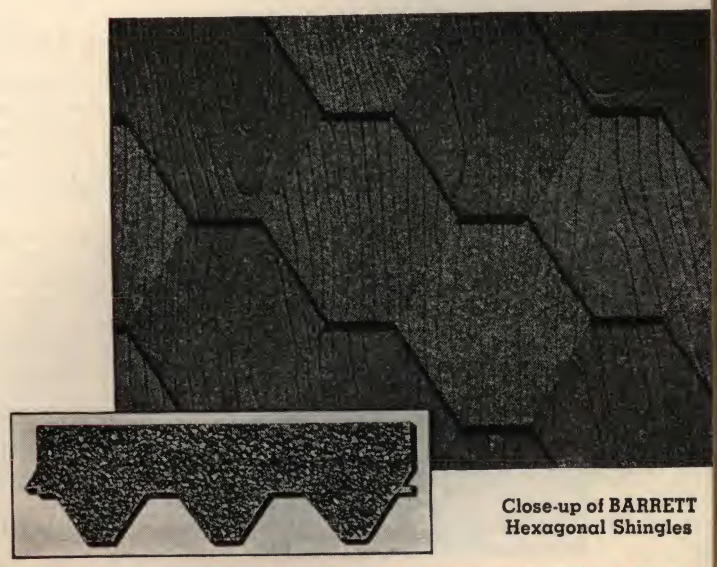
"BARRETT" HEXAGONAL SHINGLES

This ever-popular, six-sided shingle is scientifically designed to resist storm. The angled edges offer a poor target to wind from any direction—Hexagonals stay put. Application is made simpler by the dove-tailing notches and end projections in each strip, making these shingles self-aligning and self-spacing. BARRETT Hexagonal Shingles make a distinctive, good-looking roof. They come in a wide variety of handsome colors.

SPECIFICATIONS

Size	Headlap	Exposure	Approx. Wt. per Square	Shingles per Square	Bundles per Square
11⅓"x36"	2"	4⅔"	167 lbs.	86	2

Underwriters' Class C Rating.



Close-up of BARRETT Hexagonal Shingles

ROCK WOOL INSULATION

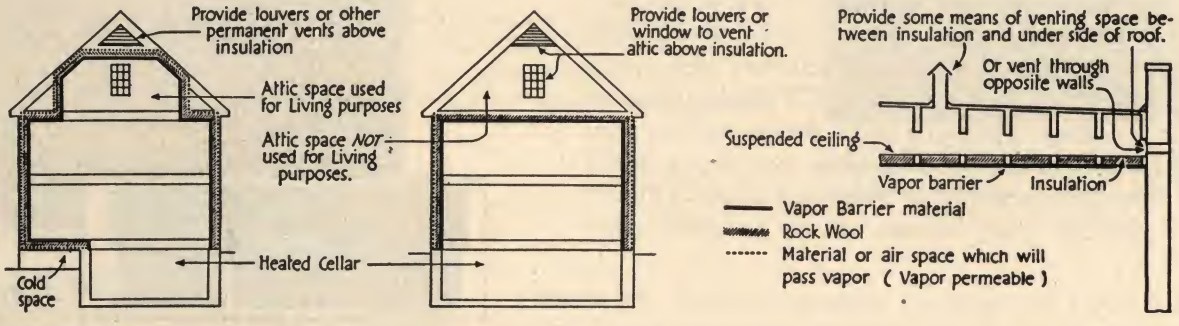
Barrett

FOR RESIDENCES AND SIMILAR STRUCTURES

The following data is presented as a guide to the proper installation of Barrett Rock Wool in typical residential and similar building structures. Where unusual job conditions are encountered, Barrett will be glad to furnish special specifications upon request.

WHERE TO USE BARRETT ROCK WOOL INSULATION IN BUILDINGS

With Proper Relationship of Vapor Barriers and Vapor Vents



INSULATING RESIDENCES AND BUILDINGS OF SIMILAR CONSTRUCTION

WITH BARRETT ROCK WOOL BATTS

Barrett Rock Wool Batts shall be furnished and installed by the contractor as follows:

The building shall be completely insulated as specified and as shown on drawings, so as to provide a continuous blanket of insulation over the entire area.

Exterior wood frame walls shall be completely filled with insulating material from top of foundation walls to roof.

Exterior solid masonry walls shall be waterproofed on the inner face (by others) before the insulation is installed. The insulating material shall be installed between the furring strips (minimum depth 2 in.) from top of foundation wall to roof.

Unfinished attic spaces shall be filled with insulating material between all ceiling joists. **Alternate:** between all roof rafters, gable and studs, in dormers, etc.

Finished attic spaces shall be filled with insulation between attic ceiling joists, roof rafters, gable and studs and in dormers.

Heated portions of the building extending beyond the main walls so that they are exposed on the under side, (i.e., sun parlor, room over porch, etc.) shall have the spaces between floor joists filled with insulating material.

Spaces outside the insulated portions of the building, such as attics, shall be adequately cross ventilated to the outside air, preferably through louvre ventilators at opposite ends of such spaces.

All insulation shall be installed in accordance with the manufacturer's instructions.

WITH BARRETT ROCK WOOL HOME INSULATION (Pneumatic Method)

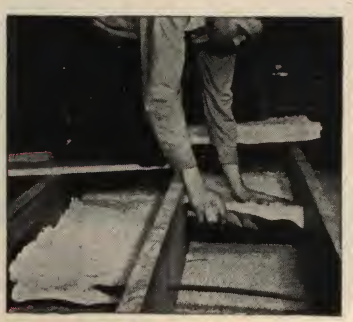
Barrett Home Insulation Rock Wool shall be furnished and installed by a Barrett Building Insulation Applicator to a thickness of not less than 4 in., except where space provided is less than this, in which instance the insulation shall fill the space. The insulation density when in place shall not exceed 10 lbs. per cubic foot.

ROOF STRUCTURE INSULATION

Where normal conditions prevail under the roof, the insulation shall preferably be applied under the roof deck.

A ventilated space shall be provided between the insulation and the roof deck for removal of moisture which may migrate to surface of insulation nearest to the deck. This space shall be not less than 2 in. deep if the distance from all points therein to the nearest ventilator is not more than 15 ft. and an extra 1 in. depth of air space shall be provided for each additional 10 ft. distance or fraction thereof.

At least two ventilating openings shall be provided at opposite extremities of each insulated space. Each ventilator shall have a free or effective area of not less than 10 sq. in. per square of insulated area.



At Left:

Applying Insulation on Drop Ceiling.

DROP CEILING CONSTRUCTION—Where a ceiling is to be provided in connection with the application of insulation, a drop or hung ceiling is recommended. A vapor resistant material such as BLACK SHIELD Sheathing or a continuous coating of Barrett ANCHOR Asphalt Paint shall be applied to the upper side of the ceiling and covered with a continuous layer of Barrett Rock Wool Insulation not less than 3 in. thick.

NO CEILING CONSTRUCTION—Where there is no ceiling below the roof deck, Barrett Rock Wool Insulation shall be applied between the rafters flush with the bottom edges thereof and to a thickness of not less than 3 in. It shall be supported on a continuous vapor resistant membrane or sheet of substantial construction and reinforced as required.

CEILING ON ROOF JOIST CONSTRUCTION — Where the ceiling is attached directly to the roof joists or rafters, Barrett Rock Wool Insulation shall be pneumatically applied between the rafters to a thickness of not less than 4 in.

At Right:

Applying Insulation Over Ceiling Attached to Roof Joists.

"TARVIA" ROAD TAR AND "TARVIA-LITHIC" BITUMINOUS CONCRETE PAVING MATERIAL

The paving problem of the architect and engineer designing industrial plants, airports, housing projects, schools and private estates differs somewhat from that of the public highway official and engineer. Barrett has had long experience with all types of paving problems and submits herein recommendations for paving with TARVIA Road Tar or TARVIA-LITHIC Bituminous Concrete paving material under various conditions.

The local Barrett representative will be pleased to discuss specific projects and Barrett literature describing the various construction processes is available.

The following outline indicates recommended base construction and the type of TARVIA Road Tar or TARVIA-LITHIC Bituminous Concrete paving material construction best suited for the conditions given.

DEPTH OF MACADAM OR EQUIVALENT BASE IN INCHES

	Driveways			Sidewalks		Parking areas		Playgrounds	
	4	6	8	3	4	4	5	3	4
Industrial Plants			x		x		x		
Housing Projects		x		x		x		x	
Schools, Hospitals, etc.		x		x		x			x
Private Estates	x			x					

The depth of bases recommended for average conditions is given in terms of water-bound macadam. Gravel, slag, crushed stone or cinders may be used.

ALTERNATE TYPES OF PAVING SURFACE

	TARVIA-LITHIC	TARVIA Road Tar			
	Bituminous Concrete	Penetration Macadam	Re-Tread	KP Mix	Surface Treatment
Driveways	x	x	x		x
Sidewalks	x			x	
Parking Areas	x	x	x		x
Playgrounds	x			x	

Mill Village street paved with TARVIA Road Tar

"TARVIA" ROAD TAR

TARVIA Road Tar is a liquid which has been extensively used for highway construction and maintenance for over a third of a century. It combines readily with aggregate to form several types of paving surfaces, all of which are stable, water-proof, durable and skid-safe.

TARVIA-LITHIC Bituminous Concrete Parking Area, Industrial Plant

"TARVIA-LITHIC" BITUMINOUS CONCRETE

TARVIA-LITHIC Bituminous Concrete coated stone is manufactured by Barrett in a central mixing plant. It is delivered by truck from the plant to the job or may be shipped for longer distances in cars.

It is prepared in two regular sizes: the coarse or three-quarter inch size and the fine or chip size. The former is used for bottom courses, spread two inches thick over the foundation and rolled in place. The fine size is spread over the consolidated coarse mix to a depth of one inch and rolled in place to form the surface. A special extra-fine size is manufactured for sidewalks, playgrounds, parking areas and private driveways.

Detailed specifications for the use of TARVIA-LITHIC Bituminous Concrete are available.

LITERATURE

The two books illustrated describe fully the construction of TARVIA Road Tar and TARVIA-LITHIC bituminous paving material wearing surfaces and also contain data for estimating quantities. They will be mailed free on request.

TARVIA-LITHIC Bituminous Concrete Surfacing for Gas Stations